Richmond Journal of Law and Technology

Volume 16 | Issue 4 Article 4

2010

The Darknet: A Digital Copyright Revolution

Jessica A. Wood

THE DARKNET: A DIGITAL COPYRIGHT REVOLUTION

By Jessica A. Wood*

Cite as: Jessica Wood, *The Darknet: A Digital Copyright Revolution*, XVI Rich. J.L. & Tech. 14 (2010), http://jolt.richmond.edu/v16i4/article14.pdf.

Introduction

[1] We are in the midst of a digital revolution. In this "Age of Peer Production," armies of amateur participants demand the freedom to rip, remix, and share their own digital culture.[1] Aided by the newest iteration of file sharing networks, digital media users now have the option to retreat underground, by using secure, private, and anonymous file sharing networks, to share freely and breathe new life into digital media.[2] These underground networks, collectively termed "the Darknet[,] will grow in scope, resilience, and effectiveness in direct proportion to [increasing] digital restrictions the public finds untenable."[3] The Darknet has been called the public's great equalizing force in the digital millennium, because it will serve as "a counterbalancing force and bulwark to

* Southern California attorney, entrepreneur and digital native. J.D., University of California, Hastings College of the Law; B.A., University of California, Berkeley. I would like to thank Professors Margreth Barrett, Robin Feldman and Jeffrey Lefstin for their guidance. Special thanks to my family, especially my parents, and friends for their support and encouragement.

[1] *See* Chris Anderson, People Power, WIRED, July 2006, *available at* http://www.wired.com/wired/archive/14.07/people html (last visited May 20, 2010).

[2] *See, e.g.*, About GNUnet, http://www.gnunet.org (last visited May 20, 2010).

[3] J.D. Lasica, DARKNET: HOLLYWOOD'S WAR AGAINST THE DIGITAL GENERATION 264 (John Wiley & Sons, Inc. 2005).

defend digital liberties" against forces lobbying for stronger copyrights and increased technological controls.[4]

[2] This article proposes a digital use exception to existing copyright law to provide adequate compensation to authors while promoting technological innovation, and the creation and dissemination of new works. Although seemingly counterintuitive, content producers, publishers, and distributors wishing to profit from their creations must relinquish their control over digital media in order to survive the Darknet era. Absent a government-granted monopoly, free market forces will provide adequate incentives to producers to create quality works, and an efficient dissemination infrastructure will evolve.

[3] Part I examines the prospect that, due to the Darknet, it is virtually impossible to control digital copying. Peer production is increasing and darknets are becoming more prevalent. Liability rules, stringent copyrights, and technological protection measures stifle innovation, smother creation, and force consumers further underground into darknets. The Darknet poses a particular threat because it is impossible to track or proscribe user behavior. Further, the presence of the Darknet will render technological protection measures unenforceable, or at least impracticable, as a solution for digital copyright management. Part II introduces a digital use exception for copyright to deter development of the Darknet. The proposed copyright shelter is the solution most closely aligned with the goals of copyright, and a monopoly is no longer necessary or practical to accomplish those goals in the digital realm. Part III explores methods by which content creators, publishers, and distributors can profit under this new rule. Absent copyrights for digital works, service providers will capitalize on alternative business methods and data mining. Driven by necessity, they will commission the production of new works.

I. THE RISE OF THE DARKNET CHALLENGES DIGITAL COPYRIGHT ENFORCEMENT

A. Peer Production and Distributed Networking

1. Digital Content Consumers Become Producers

[4] Internet users no longer passively consume media. Today's consumers actively participate, communicate, collaborate, and create a considerable amount

[4] *Id.*

of amateur content (often referred to as user-generated content or UGC).[5] This new breed of producer-consumers, sometimes termed "prosumers," embodies democratic culture.[6] The digital revolution promises prosumers freedom to interact with media on their own terms.[7] Not only do they choose what to watch, read, hear, or create, they dictate when, where, how, and with whom they will do so.[8]

[5] Amateur production on the Internet is growing in volume and sophistication[9] with prosumers expressing themselves through blogs, videos, photos, music (original scores, mash-ups and remixes), personalized web pages, and software applications.[10] Web 2.0, the newest generation of Internet development, provides the technology that facilitates prosumer participation: wikis, podcasting, news fora, social networking sites, hosting services, and search engines.[11] Peer-to-peer (P2P) networking is arguably the most controversial of these technologies. Peer-to-peer networking is a natural companion to peer production because it provides an efficient distribution vehicle for digital media and allows near-perfect access to content.[12] Since users communicate directly and

[5] *See, e.g.*, Press Release, Principles for User Generated Content Services, Internet and Media Industry Leaders Unveil Principles to Foster Online Innovation While Protecting Copyrights (Oct. 18, 2007), *available at* http://www.ugcprinciples.com/press_release html (last visited May 20, 2010).

[6] ALVIN TOFFLER, THE THIRD WAVE 283 (William Morrow & Company 1980) (coining the term "prosumers").

[7] *See id.*

[8] *See* LAWRENCE LESSIG, REMIX: MAKING ART AND COMMERCE THRIVE IN THE HYBRID ECONOMY 44 (Penguin Press 2008).

[9] Johan A. Pouwelse et al., *Pirates and Samaritans: a Decade of Measurements on Peer Production and Their Implications for Net Neutrality and Copyright*, 32 TELECOMMS. POL'Y 701, 711 (2008) (detailing Dutch scientists' findings from research that tracked P2P networking for ten years).

[10] *See, e.g.*, YouTube Home Page, http://www.youtube.com (last visited May 20, 2010); WordPress Home Page, http://wordpress.com (last visited May 20, 2010).

[11] *See* Claudia K. Grinnell, *From Consumer to Prosumer to Produser: Who Keeps Shifting My Paradigm? (We Do!)*, 21 PUB. CULTURE 577, 595 (2009).

[12] Pouwelse et al., *supra* note 9, at 702.

contribute both content and hardware resources, P2P replaces the traditional, central-server Internet model as the primary vehicle for content distribution.[13]

2. Distributed Networking Technology

[6] Peer-to-peer distribution technology differs from traditional Internet functioning by permitting computers to share information directly with other computers without the need for a central storage server.[14] Previously, computers connected to the Internet communicated with each other through servers using standard Protocol guidelines.[15] Internet Protocol (IP) addresses that identify each computer on the Internet can be converted to recognizable names (e.g., www.spacebook.com).[16] Typically, media files and other content are stored on central servers (hosts) in a traditional client/server relationship.[17] In that system, client (user) computers can only access information on servers through websites using the Internet, and clients cannot exchange files directly with other client computers.[18] In contrast, a P2P network permits a computer connected to the Internet to identify itself as both a client and a server, thereby enabling the computer to communicate directly with any other computer on the Internet to exchange files.[19] All types of P2P network models fall within the classification of distributed networks because no central server stores the files.[20]

[7] In a distributed network, every computer acts as a host, and each user can introduce content to the network by storing files on their computer and making

[13] *Id.*

[14] Stephanos Androutsellis-Theotokis & Diomidis Spinellis, *A Survey of Peer-to-Peer Content Distribution Technologies*, 36 ACM COMPUTING SURVEYS 335, 335-36 (2004).

[15] Grinnell, *supra* note 11, at 578.

[16] BILL AVERY, SAN LUIS OBISPO PC USERS GROUP: GENERAL MEETING 2 (2002), http://www.slobytes.org/newsletter/nl1202.pdf.

[17] David Barkai, *An Introduction to Peer-to-Peer Computing*, INTEL DEVELOPER MAG., Feb. 2000, at 1, 3.

[18] *Id.*

[19] *Id.*

[20] Androutsellis-Theotokis, *supra* note 14, at 337.

those files available to others on the network.[21] The content available at any given moment depends on the contemporaneous files on the network users' computers.[22] A software application is required to establish a P2P network connection.[23] Instead of locating a website address, as is used on client/server networks, a P2P program retrieves the IP addresses of other available users and establishes a direct connection between two or more computers.[24] The software then allows the users to exchange files, chat, or engage in other activities directly between the networked computers.[25]

[8] Although there are several types of P2P architectural designs, all distributed networks have the same infrastructure requirements:

> (1) facilities for injecting new content into the [network] (input); (2) a distribution network that carries copies of content to users (transmission); (3) ubiquitous rendering devices, which allow users to consume [content] (output); (4) a search mechanism to enable users to find objects (database); (5) storage that allows the [network] to retain [content] for extended periods of time. Functionally, this is mostly a caching mechanism that reduces the load and exposure of nodes that inject [objects].[26]

Effective P2P platforms demonstrate the following additional features: "(1) The ability to distinguish between good and bad contributions; (2) A regulation mechanism for computer resources; (3) Effective mechanisms for group

---

[21] *See* James Cope, *QuickStudy: Peer-to-Peer Network*, COMPUTER WORLD, Apr. 8, 2002, http://www.computerworld.com/s/article/69883/Peer_to_Peer_Network.

[22] *See id.*

[23] *See generally* Microsoft Support, How to Set Up a TCP/IP Peer-to-Peer Network Connection, http://support.microsoft.com/kb/150575 (last visited May 20, 2010).

[24] *See id.*

[25] Aric Jacover, *Note, I Want My MP3! Creating a Legal and Practical Scheme to Combat Copyright Infringement on Peer-to-Peer Internet Applications*, 90 GEO. L.J. 2207, 2208 (2002).

[26] PETER BIDDLE ET AL., THE DARKNET AND THE FUTURE OF CONTENT DISTRIBUTION 2 (2002), http://msl1.mit.edu/ESD10/docs/darknet5.pdf. The aforementioned source is a paper presented by Microsoft computer security experts at a 2002 ACM Workshop on Digital Rights Management. ACMSiggraph Public Policy Program, http://www.siggraph.org/pub-policy/CGColumn-02-2003.html (last visited May 20, 2010).

communication; [and] (4) A sense of community."[27] These features act as network regulators to ensure user contribution, resource management, communication, and longevity.[28]

3. Distributed Networks Promote Progress More Effectively Than Client/Server Networks

a. Optimal Means of Digital Content Distribution

[9] Public distributed networks are an immensely valuable tool for the creation and dissemination of digital creative works. They are the economically and technologically optimal vehicles for digital content distribution. Distributed networks are economically efficient because users donate their own (often idle) computing resources[29] to facilitate distribution, essentially providing free bandwidth, storage space, and computing power.[30] Storage and distribution costs shift to users and are spread amongst all users in the network.[31] Unlike traditional client/server networks, which have fixed capacities, distributed networks are scalable—capable of increasing their performance as they grow in physical size.[32] As users provide the system infrastructure, when demand on the system increases with the addition of new users and content, the total capacity of the system also increases.[33] Distributed networks are less vulnerable to bandwidth constraints than traditional client/server models, where users connect through a single website or server.[34] Sharing resources across a network is more stable and reliable than traditional client/server distribution because a breach or failure in one sector will

[27] Pouwelse et al., *supra* note 9, at 704.

[28] *Id.*

[29] *See* Mark A. Lemley & R. Anthony Reese, *Reducing Digital Copyright Without Restricting Innovation*, 56 STAN. L. REV. 1345, 1382 (2004).

[30] *See* Niva Elkin-Koren, *Making Technology Visible: Liability of Internet Service Providers for Peer-to-Peer Traffic*, 9 N.Y.U. J. LEGIS. & PUB. POL'Y 15, 22 (2006).

[31] *Id.*

[32] *Id.* at 21.

[33] *Id.*

[34] *See* Lemley & Reese, *supra* note 29, at 1381-82.

not sabotage the whole system.[35] Since connections between users are direct, distributed networks deliver content more quickly and efficiently than traditional models.[36] Additionally, transmitting information directly between users avoids the bottleneck effect of traditional client/server transmission.[37] Peer-to-peer network models equipped with a central index can quickly locate files and comprehensively search through all resources on the network.[38] Furthermore, users benefit from locating and using works for free, and the low cost of distributed networking may increase the public's access to hard-to-find, out of print, or orphaned works that have been made available digitally.[39]

b. Increase the Volume and Quality of Creative Works

[10] In addition to making all works more accessible, P2P networking increases the breadth and depth of the public's collective knowledge by providing a greater volume and variety of new creative works. Just as users donate computing resources on P2P networks, many consumers also volunteer their creative resources. As reproduction, storage, and distribution become cheaper, more prosumers contribute to the collective directory. The blossom of peer production results in an increased output of new works.

[11] Peer-to-peer networks also improve the quality of publicly available goods. Improvements in commercial technology enable prosumers to easily and quickly generate more sophisticated and innovative works.[40] In addition, P2P networks facilitate collaboration,[41] which leads to better quality. Accordingly, distributed networks are frequently employed on university campuses and in

[35] *See id.*

[36] *See id.*

[37] *See* Elkin-Koren, *supra* note 30, at 17.

[38] *See id.* at 20.

[39] *See id.* at 69-70.

[40] Derek E. Baumbauer, *Faulty Math: The Economics of Legalizing the Grey Album*, 59 ALA. L. REV. 345, 352 (2008).

[41] *See* Jamie Oberdick, *Best Uses for LionShare, Penn State's Peer-to-Peer Academic Collaboration Tool*, Nov. 30, 2006, http://www.psu.edu/dept/itscss/news/nlfa06/lionshare.html.

scientific communities to lower research costs, share ideas and information, and collaborate with like-minded peers.[42]

[12] For instance, LionShare is a P2P network designed to support the discovery and reuse of educational content between multiple academic institutions.[43] As media files are increasing in size, LionShare makes it easier for professors and students to transfer those files to one another.[44] The multiuser group chat function facilitates collaboration between several academic players located at various institutions.[45] To deter unauthorized sharing of protected materials, this system was specifically designed such that users are not anonymous.[46]

[13] Peer-to-peer networks provide a low cost alternative to traditional marketing and advertising for creative content.[47] "Making a song available for download to generate hype about a new release takes seconds, and relying on peer-to-peer sharing to disseminate the song costs the music industry very little."[48] This low cost of promotion minimizes financial risks in business planning.[49] Lower risks and reduced distribution costs make it economically feasible to produce and disseminate new types of marginal media that might attract only a small group of fans.[50] Thus, distributed networking provides new opportunities for innovation as many niche markets might flourish with the

[42] *See id.*

[43] *See id.*

[44] *See id.*

[45] *See id.*

[46] *See id.*

[47] Baumbauer, *supra* note 40, at 351.

[48] Meghan Douherty, *Note, Voluntary Collective Licensing: The Solution to the Music Industry's File Sharing Crisis?*, 13 J. INTELL. PROP. L. 405, 408 (2006).

[49] *See id.*

[50] Elkin-Koren, *supra* note 30, at 69-70.

addition of groups previously considered too small or obscure to justify offering them a customized product.[51]

c. Consumer Freedom and Control Protects First Amendment Rights

[14] Peer-to-peer networks facilitate bottom-up participation that enriches the democratic process.[52] Enhanced peer production and increased availability of marginal works protect the interests of minority or unpopular political factions.[53] Users connect directly to each other; removing intermediaries from the communication process.[54] The lack of central control makes distributed networks less vulnerable to censorship and protects citizens' rights to free speech, press, and assembly. [55]

[15] Moreover, distributed networks are inherently responsive to content demands. The fact that consumers are also suppliers means that if a large number of people want to download a particular work, then a large number of people are likely to make that work available for upload as well. Since users are free to make their own choices about what content to consume, P2P networking shifts control to users to decide what content to make available and when to make it available.[56] Peer-to-peer networking also allows this decision-making process to operate on a large scale.[57] There is less risk that unpopular or marginal works will be scarce since digital reproduction costs very little, and digital networking eliminates the need for publishers to print additional copies or make guesses regarding the popularity of works (to divvy up server storage space and marketing dollars).[58]

---

[51] *See* Baumbauer, *supra* note 40, at 352 (arguing that open source software and other applications where "users can tailor works to suit their needs" are particularly beneficial to users who constitute a "group too small or obscure for the original author to see any benefit in offering them a customized product.").

[52] Elkin-Koren, *supra* note 30, at 70.

[53] *Id.*

[54] *Id.* at 19-20.

[55] *Id.* at 23; *see* U.S. CONST. amend. I.

[56] Elkin-Koren, *supra* note 30, at 69.

[57] *Id.*

[58] *Id.* at 69-70.

[16] Additionally, many P2P software application systems are written using open source code.[59] Open architecture facilitates innovation by non-industry or fringe players that might have different interests and incentives from the industry standard.[60] This encourages quality through competition by allowing the development of subversive technologies that can challenge the existing technological paradigm.[61]

B. Liability Rules Inhibit Innovation in the Development of P2P Network Design

1. Early P2P Technology: Centralized Networks

[17] Generally, P2P networks are either centralized or decentralized.[62] Centralized models, such as Napster, utilize a central server system that facilitates users' activities in the network.[63] Files are stored and distributed by means of users' own computers, not on the server.[64] The server's function is to establish connections between users and facilitate user-initiated file searches, using (and storing) a directory of available file names and users' IP addresses.[65] Users can search the directory for files available on all host users' computers.[66] Then, the P2P software establishes a connection between those two users, who transfer the file directly between their computers.[67]

[18] The centralized model is preferred because the directory and central index locate files quickly and efficiently.[68] Since users must access the system through a

[59] *See* Baumbauer, *supra* note 40, at 382-83.

[60] Elkin-Koren, *supra* note 30, at 70.

[61] *Id.*

[62] *See id.*

[63] *Id.* at 20.

[64] *Id.* at 17.

[65] *Id.* at 19-20.

[66] *Id.* at 20.

[67] *Id.* at 19-20.

[68] *See* Jacover, *supra* note 25, at 2217.

central point, one can disable the entire system by shutting down the server, thus, providing considerable control over users.[69] Most importantly, users must register with the system (to be located and connected), so the service provider knows the identity of each user, as well as what he is downloading.[70]

[19] In the 1990s, the propagation of digital technologies provoked the media content industry to lobby Congress for stronger copyright protection.[71] When it's lobbying proved successful, the media content industry implemented an aggressive litigation strategy designed to enforce the new rules.[72] Initially, the content industry targeted commercial entities for contributory and vicarious infringement because a single lawsuit could shut down the central server and eliminate an entire dissemination mechanism.[73]

[20] Unfortunately, the same features of the centralized model that make it efficient also render its purveyors more susceptible to vicarious liability for users' copyright infringement. In 2001, a Ninth Circuit court held Napster, a P2P service provider, potentially liable for contributory and vicarious copyright infringement.[74] The court cited Napster's ability to control user behavior through their central search index as a primary rationale.[75] Although the court ordered

[69] *See* Metro-Goldwyn-Mayer Studios, Inc. v. Grokster, Ltd., 259 F. Supp. 2d 1029, 1041 (C.D. Cal. 2003).

[70] A&M Recs., Inc. v. Napster, Inc., 239 F.3d 1004, 1011 (9th Cir. 2001).

[71] *See* Sonny Bono Copyright Term Extension Act, Pub. L. No. 105-298, 112 Stat. 2827 (1998) (codified as amended in scattered sections of 17 U.S.C.) (extending copyright terms in the United States by 20 years); Digital Millennium Copyright Act, 17 U.S.C. § 1201 (2006) (outlawing the act of circumventing technological measures that effectively control access to a work); No Electronic Theft (NET) Act, Pub. L. No. 105-147, 111 Stat. 2678 (1997) (codified at 17 U.S.C. §§ 101, 506-07, 18 U.S.C. §§ 994, 2319-20, 28 U.S.C. § 1498) (applying criminal penalties to copyright infringement even when no direct financial benefit was received by the infringer).

[72] LESSIG, *supra* note 8, at 39.

[73] Lemley & Reese, *supra* note 29, at 1377.

[74] *A&M Recs.*, 239 F.3d at 1024.

[75] *Id.* at 1022-24. The court found Napster liable for contributory infringement because its services were designed to enable users to locate and download music files. *Id.* at 1024. The court reasoned that Napster materially contributed to its users' infringement since evidence showed Napster had actual knowledge of infringing activity on the network but failed to purge the system. *Id.* at 1022. Additionally, the court found Napster vicariously liable for its users' infringing activities because the central index provided Napster with the right and ability to supervise its users. *Id.* at 1024. The

Napster to prevent sharing of particular files on its system and exercise control over users identified as infringers, the company was unable to create a filtering mechanism sufficiently accurate to meet its obligation with the court. Ultimately, Napster filed for bankruptcy.[76] While Napster's demise might have signaled the end of unauthorized file sharing across its network, it cast a shadow on the socially beneficial, legitimate uses for centralized networks.

2. Second Generation Technology: Decentralized (Fully Distributed) Networks

[21] The *Napster* ruling signaled the demise of centralized networks and spurred a shift to less efficient, decentralized networks that are detrimental to social welfare.[77] One indication that liability rules influence product design is that architects redesigned networks to minimize the risk of being sued, often at the expense of social welfare.[78] Scholars have noted that P2P networks fall prey to increased legal pressure to redesign their networks to inhibit sharing.[79] This evolution of inferior technology poses significant threats to copyright enforcement on the Internet by making it harder to track and identify infringement.

[22] As a consequence of the *Napster* ruling, subsequent P2P network operators, wanting to avoid liability for user-initiated sharing, sought to decentralize their systems.[80] Second generation technology connects users directly

court believed that Napster could locate infringing material listed on its central search indices and had the right to terminate users' access to the system. *Id.* Although Napster's service was free to users, the unauthorized materials increased traffic and advertising revenue. *Id.* at 1023.

[76] *See* Vickie L. Feeman et al., *Revenge of the Record Industry Association of America: The Rise and Fall of Napster*, 9 VILL. SPORTS & ENT. L.J. 35, 53 (2002); *see also* Evan Hansen & Lisa M. Bowman, *Court: Napster Filters Must Be Foolproof*, CNET NEWS, July 12, 2001, http://news.cnet.com/news/0-1005-200-6549898 html (last visited May 20, 2010).

[77] *See* RAMEEZ RAHMAN ET AL., REVISITING SOCIAL WELFARE IN P2P, DELFT UNIVERSITY OF TECHNOLOGY PARALLEL AND DISTRIBUTED SYSTEMS REPORT SERIES (2009), http://pds.twi.tudelft nl/reports/2009/PDS-2009-003.pdf.

[78] *See* Michael Baram, *Liability and Its Influence on Designing for Product and Process Safety*, 45 SAFETY SCI. 11, 13 (2007) (discussing how tort product liability law influences product design).

[79] Elkin-Koren, *supra* note 30, at 60.

[80] *See* Lemley & Reese, *supra* note 29, at 1355-65.

to each other without routing information through a single central server (like centralized models).[81] In contrast to centralized models, the new decentralized models do not employ a directory or centralized index to route searches.[82] Further, they cannot store a search index, identify users, or directly facilitate connections.[83] Semi-distributed hybrid systems, such as the FastTrack protocol used by Grokster, abandon the central index but randomly (and unbeknownst to the user) assign computers in the system to operate as supernodes—centralized connection points that index files and handle search requests.[84] These connections speed searching and processing functions and avoid bottlenecking.

[23] Rather than utilize supernodes, fully decentralized models, such as Gnutella, route searches serially through any available users on the network.[85] Both models create communities by pooling the IP addresses of users connected to the Internet, enabling a branching network that allows users to connect with each other directly.[86] After entering the network, a user can search for files through all the computers to which he is connected, communicate, and trade files with other users, "without using any central servers or intermediaries."[87] Unlike FastTrack, Gnutella further distances itself from liability because "it is an open [source] protocol, and anyone can write a Gnutella client application," meaning there is no single operator to hold liable.[88]

[24] Decentralized systems are generally less efficient than networks with a central index because the branching system design slows searches and file exchanges.[89] Moreover, service providers of decentralized systems have less

[81] BIDDLE ET AL., *supra* note 26, at 6.

[82] Metro-Goldwyn-Mayers Studios, Inc. v. Grokster, Ltd., 545 U.S. 913, 920 (2005).

[83] *Id.*

[84] *Id.* at 921.

[85] The original Gnutella software application is no longer in circulation but similar open source versions may be available. See Marshall Brain, How Gnutella Works, http://computer howstuffworks.com/file-sharing2 htm (last visited May 20, 2010).

[86] Jacover, *supra* note 25, at 2216.

[87] *See id.* at 2215–17.

[88] BIDDLE ET AL., *supra* note 26, at 6.

[89] Jacover, *supra* note 25, at 2217.

control over users. Without a central server, a provider has little or no ability to supervise infringing activity and cannot remove infringing titles or infringing users from the system.[90] Decentralized systems are also more difficult to shut down because there is no central access point.[91] Further, as many decentralized systems use open source protocols, shutting down part of the system is ineffective because savvy users can adapt copies of the program's code to keep the system running.[92]

[25] The scattered design of decentralized systems also encourages free riding by users who wish to download without uploading. Such behavior compromises the system's effectiveness because storage costs are not dissipated evenly amongst users. Protocols, such as BitTorrent, were developed to stabilize contribution levels on P2P networks.[93] These services make collaboration mandatory because they restrict users' content download rates based on the value of the users' current contributions.[94]

[26] Early versions of BitTorrent required an intermediary "tracker" service to perform the search function and aggregate torrent files to enable uploading and downloading.[95] The trackers "maintain[ed] a log [detailing] which users . . . download[ed] the file and where the file and its fragments reside[d]."[96] The logs were instrumental in lawsuits against trackers by "identifying infringers who downloaded and shared copyrighted material."[97]

[27] After being shut down and redesigned in the face of litigation threats,[98] subsequent versions of BitTorrent eliminated the need for trackers.[99] "With no

[90] *Id.* at 2240.

[91] *See id.* at 2217, 2240.

[92] *See id.* at 2245.

[93] *See* Pouwelse et al., *supra* note 9, at 705.

[94] *Id.*; *see also* BIDDLE ET AL., *supra* note 26, at 6.

[95] Elkin-Koren, *supra* note 30, at 59.

[96] *Id.*

[97] *Id.* at 59-60.

[98] SuprNova, once the largest BitTorrent tracker service was forced to shut down following the launch of the Motion Picture Association of America's (MPAA) campaign against unauthorized

central features, the new design makes it more difficult for copyright holders to track and shut down illegal file sharing."[100] But shutting down efficient distribution services and "forc[ing society] to rely on a less-efficient mechanism for disseminating digital content . . . represents a cost to society."[101]

3. The Evolution of the Darknet

[28] Created by developers responding to threats of litigation, decentralized P2P technology shifted control away from the service provider, making it more difficult to track user behavior. Those P2P networks retain one key feature: users of Gnutella and other BitTorrent-type networks "are not anonymous."[102] By permitting the determination of server endpoints, decentralized networks reveal the IP address and affiliation of file sharing peers.[103] Although, activity and users

file sharing. John Borland, *BitTorrent File-Swapping Networks Face Crisis*, CNET NEWS, Dec. 20, 2004, http://news.cnet.com/BitTorrent-file-swapping-networks-face-crisis/2100-1025_3-5498326.html; *see also* John Borland, *MPAA Targets Core BitTorrent, eDonkey User*, CNET NEWS, Dec. 14, 2004, http://news.cnet.com/MPAA-targets-core-BitTorrent%2C-eDonkey-users/2100-1025_3-5490804.html. Many users of the SuprNova BitTorrent service retreated back to the Gnutella protocol on Grokster until the Court forced it to close in 2005. Metro-Goldwyn-Mayers Studios, Inc. v. Grokster, Ltd., 545 U.S. 913, 941 (2005) (holding Grokster liable for users' infringing behavior since they distributed their product with the intention of inducing infringement and then reaped the commercial benefits). Remaining providers of file sharing software seek refuge under the Court's holding in *Sony Corp. of Am. v. Universal City Studios*, Inc., which found that the distribution of copying equipment does not constitute contributory infringement if it is capable of substantial non-infringing uses. 464 U.S. 417, 442 (1984). Organizations that continue to distribute file sharing software actively take steps to avoid Grokster liability. For instance, LimeWire, whose software runs on Gnutella-type protocol, requires that users agree not to infringe copyright. LimeWire, End User License Agreement, http://www.limewire.com/legal/eula (last visited May 20, 2010). LimeWire also makes affirmative efforts to educate users about unauthorized file sharing. LimeWire, Using P2P Software Safely, http://www.limewire.com/legal/safety (last visited May 20, 2010).

[99] It has been suggested, however, that BitTorrent files could still be identified without tracker sites since someone still hosts the infringing files. *See* Renai LeMay, BitTorrent Enemies Face New Hurdle, CNET NEWS, May 20, 2005, http://news.cnet.com/BitTorrent-enemies-face-new-hurdle/2100-1032_3-5715093.html?tag=mncol.

[100] Elkin-Koren, *supra* note 30, at 60.

[101] Lemley & Reese, *supra* note 29, at 1383.

[102] BIDDLE ET AL., *supra* note 26, at 7.

[103] *Id.*

on public P2P networks are difficult to track, it is not impossible.[104] Thus, it is possible to detect infringing behavior and identify defendants for litigation. Further, decentralized networks are not private since peers communicate with everybody on the network.[105]

[29] The final steps in the P2P evolution process came when, after targeting commercial entities (such as Napster) with their steadfast litigation, the content industry shifted its attention to ordinary citizens.[106] The Recording Industry Association of America (RIAA) has sued over fifteen thousand individuals alleging copyright infringement.[107] To escape liability, consumers demanded that P2P developers follow their own precedent and improve distributed networks to shield users from liability by providing users with anonymity, privacy, and increased security control.[108] These newest versions of distributed networks, known as darknets, pose a serious threat to copyright enforcement on the Internet by concealing user behavior from detection.

C. The Darknet

[30] Generally, the Darknet refers to the underground Internet.[109] In November 2002, four senior Microsoft security engineers coined the term "Darknet" in an influential paper entitled *The Darknet and the Future of Content Distribution*.[110] In a post-Napster, pre-Gnutella environment, the engineers defined darknets broadly as "a collection of networks and technologies used to share digital content."[111] Since then, the term has infiltrated the mainstream media and been used to refer to a variety of clandestine Internet activities and technologies. From

---

[104] *See id.* at 5.

[105] *See* Cope, *supra* note 21.

[106] LESSIG, *supra* note 8, at 39.

[107] Posting of RIAA Watcher to RIAA Watch, http://sharenomore.blogspot.com (June 16, 2006, 14:57 EST) (monitoring the volume of lawsuits filed by the RIAA).

[108] *See* MIKA SUVANTO, PRIVACY IN PEER-TO-PEER NETWORKS, 3 (2010) http://www.tml.tkk.fi/Publications/C/18/suvanto.pdf.

[109] LASICA, *supra* note 4, at 45.

[110] BIDDLE ET AL., *supra* note 26, at 1.

[111] *Id.*

small file sharing networks to elite and exclusive cyber clubs,[112] to databases unreachable by cyber robots,[113] to avenues for cybercrime and Internet terrorism,[114] the Darknet evokes increasingly nebulous and threatening activities.

[31] More recently, the term is used to differentiate private, anonymous distributed networks from their public predecessors.[115] In his groundbreaking legal work regarding darknets, Fred von Lohmann incorporated the element of privacy, defining the Darknet as "[t]he collection of networks and other technologies that enable people to illegally share copyrighted digital files with little or no fear of detection."[116] In his 2005 book, *Darknet: Hollywood's War Against the Digital Generation*, Darknet expert J.D. Lasica emphasized that darknets can be used for illegitimate activities.[117] Lascia defined darknets as "networks of people who rely on closed-off social spaces—safe havens in both virtual and real worlds where there is little or no fear of detection—to share copyrighted digital material with others or to escape the restrictions on digital media imposed by entertainment companies."[118] Lasica described the Darknet

[112] Gary Rivlin, *2003: The 3rd Annual Year in Ideas; Darknets*, N.Y. TIMES, Dec. 14, 2003, *available at* http://www nytimes.com/2003/12/14/magazine/2003-the-3rd-annual-year-in-ideas-darknets html?sec=technology&spon= (describing darknets as private, invitation-only cyberclubs or gated communities requiring an access code to enter).

[113] LASICA, *supra* note 4, at 45 (noting that librarians use "the phrases DarkWeb, InvisibleWeb, and DarkNet to refer to the information such as books and periodicals that reside inside walled-off online databases and are off-limits to search engines and indexing software robots.").

[114] *Id.* (stating that Darknet can refer to "the world of cybercrime, spammers, terrorists, and other underworld figures who use dark spaces found on Internet networks to avert the law.").

[115] The Darknet has its roots in underground physical networks organized around groups of friends that shared music on cassette tapes and computer disks. *See id.* That distribution network, termed the "SneakerNet," consisted of handing off physical media between members of the group. Webopedia.com, Sneakernet, http://www.webopedia.com/TERM/S/sneakernet html (last visited May 20, 2010). As technology evolved, so did the methods by which users sought to share media.

[116] Fred von Lohmann, *Measuring the Digital Millennium Copyright Act Against the Darknet: Implications for the Regulation of Technological Protection Measures*, 24 LOY. L.A. ENT. L. REV. 635, 637 n.15 (2004) (citing The Word Spy, http://www.wordspy.com/words/darknet.asp (last visited May 20, 2010)). Fred von Lohmann is senior staff attorney at the Electronic Frontier Foundation (EFF), a non-profit organization that aims to protect the public interest in digital rights matters. Elec. Frontier Found., http://www.eff.org/about/staff (last visited May 20, 2010).

[117] LASICA, *supra* note 4, at 45

[118] LASICA, *supra* note 4, at 45. Lasica describes many darknets including:

space as a digital media mega-mart with a wild-west mentality, a "vast, gathering, lawless economy of shared music, movies, television shows, games, software, and porn—a one-touch jukebox that would rival the products and services of the entertainment companies."[119]

[32] Users often refer to darknets for file sharing as friend-to-friend (F2F) networks, because direct connections are only established between trusted friends.[120] But the term "Darknet" can also be used to describe any private file sharing network.[121] For the sake of clarity, this article will differentiate between these terms. The term "darknet" will refer to a decentralized distributed network (lacking a central index) that incorporates privacy, security (encryption), and user anonymity features, with the primary purpose of sharing information with trusted members. When capitalized, "Darknet" will refer to those networks collectively.

[33] The goal of darknets is to create a closed network to communicate securely in a manner that defies detection or penetration by governments or corporations.[122] A user can download, upload, and inject content anonymously, meaning an outsider cannot sufficiently identify a user.[123] Improvements in privacy and security permit increased anonymity, and the lack of a public entry

---

> [T]he millions of users trading files in the shady regions of Usenet and Internet Relay Chat; students who send songs and TV shows to each other using instant messaging services from AOL, Yahoo, and Microsoft; city streets and college campuses where people copy, burn, and share physical media like CDs; and the new breed of encrypted dark networks like Freenet . . . .

Id.

[119] *Id.*

[120] *See* MICHAEL ROGERS & SALEEM BHATTI, HOW TO DISAPPEAR COMPLETELY: A SURVEY OF PRIVATE PEER-TO-PEER NETWORKS 2 (2007), available at http://www.cs.st-andrews.ac.uk/~saleem/papers/2007/space2007/space2007-rb2007.pdf.

[121] *See* Bradley Mitchell, About.com: Wireless/Networking, http://compnetworking.about.com/od/p2ppeertopeer/g/bldef_darknet.htm?p=1 (last visited May 20, 2010).

[122] *See* John Markoff, *File Sharers Anonymous: Building a Net That's Private*, N.Y. TIMES, Aug. 1, 2005, available at http://query nytimes.com/gst/fullpage html?res=9503E4DE1E3FF932A3575BC0A9639C8B63 (last visited May 20, 2010).

[123] Pouwelse et al., *supra* note 9, at 709.

point to the network makes it difficult or impossible for outsiders to discover what users share on darknets.[124]

1. The Immediate Future of the Darknet

[34] Darknet technology has been in development for several years and is currently on the verge of becoming a commercially feasible alternative to traditional P2P networks.[125] Although early darknets faced some technological challenges that made them inefficient and difficult to use, recent improvements have propelled darknets into the general marketplace.[126] Viable darknet models were recently released for commercial use, and scholars have predicted that darknets will be ready for mass usage in 2010.[127] Widespread use of darknets will frustrate efforts to detect and track illegal file sharing, making enforcement of copyrights on the Internet difficult or impossible.

a. Improvements in Security and Privacy

[35] Freenet is one of the earliest examples of a darknet.[128] The Freenet Project produced a darknet in 2000, but it was slow, difficult to use, and offered little content.[129] Full anonymity posed a challenge as it cost extra bandwidth and was difficult to combine with enforcement of resource contributions.[130] Irish programmer Ian Clarke, who introduced the Freenet software, vehemently asserted that the primary goal of his darknet was to protect political opponents of repressive regimes.[131] Freenet's website claimed that, without anonymity, there can never be true freedom of speech, and without decentralization, the network

[124] *Id.*

[125] *See id.*

[126] *See id.*

[127] *See id.*

[128] *See* Dawn C. Chmielewski, *Darknets Rising to Expand File Sharing*, MERCURY NEWS, Aug. 5, 2005.

[129] Pouwelse et al., *supra* note 9, at 709.

[130] *Id.*

[131] Markoff, *supra* note 122. Clarke presumably publicly promoted this agenda to escape Grokster-type infringement liability.

will be vulnerable to attack.[132] Freenet might inhibit censorship by proscribing governments and corporations from restricting the flow of digital information.[133] It is worth noting that Clarke is open about his disdain for copyright laws and asserts that his technology would produce a world in which users may share all information freely.[134] Clarke acknowledges that the software would surely be used to circumvent copyright restrictions, adding: ''It's an inevitable consequence of our design.''[135]

[36] A major development in the current version of Freenet is scalability—the software is capable of supporting millions of users using an application of small-world network theory.[136] To preserve user anonymity, Freenet increased network security by allowing users to limit which other peers they communicate with, in contrast to the typical 'promiscuous' approach of classic P2P networks, in which the connection between users is automatic.[137] Freenet not only prevents outsiders from finding out what users are doing, but it also makes it extremely difficult for adversaries to know a user is running a Freenet node[138] or to discover the identity of anyone publishing or downloading content.[139]

b. Improvements in User Interface Design and Mass Distribution

[37] While earlier versions were reserved for sophisticated users, improved user interface design makes the Darknet accessible to the average consumer. The most recent version of a darknet is LimeWire's Upgrade 5.1 (LW5),[140] which

[132] *See* The Freenet Project, http://freenetproject.org (last visited May 20, 2010).

[133] The Freenet Project, What is Freenet?, http://freenetproject.org/whatis html (last visited May 20, 2010).

[134] Markoff, *supra* note 122.

[135] *Id.*

[136] The Freenet Project, *supra* note 133.

[137] Posting of CoyboyNeal to http://yro.slashdot.org/yro/06/04/04/0148224.shtml (Apr. 3, 2006, 23:15 EST).

[138] *Id.*

[139] The Freenet Project, *supra* note 133.

[140] Eliot Van Buskirk, *LimeWire Adds Private File Sharing*, WIRED, Dec. 10, 2008, http://www.wired.com/epicenter/2008/12/lime-wire-adds (stating that the alpha version of

enables users to create private networks for file sharing.[141] The user-friendly technology offers users a heightened level of control by allowing them to easily designate which files or classes of files they wish to share (on a user-by-user and file-by-file and basis).[142] The software enables users to connect directly to their contacts located on any Jabber server, such as GMail or LiveJournal, and users retain complete control over the people with whom they share content.[143] LimeWire 5.1's default setting does not share documents with its public P2P network and does not share information with parties outside of a user's network, rendering activity on users' networks difficult or impossible to detect.[144] The mainstream circulation of Darknets could make it more difficult for rights-holders to detect infringing activity on a mass scale.[145]

[38] Although other, less popular services exist for group file sharing, such as Dropbox and RapidShare, the LW5 release is significant because it offers privacy and propels the Darknet into mainstream use.[146] Prior darknets were generally limited to the tech savvy, but LW5 is easily distributed to LimeWire's millions of existing customers as an upgrade and is accessible even to those with limited technical skills and no familiarity with current Darknet systems.[147] Perhaps the

---

LimeWire 5.1 was made public for Windows, Mac and Linux); see Live from CES 2009: Competing with Free, http://blog.copyrightalliance.org/2009/01/live-from-ces-2009-competing-with-free (Jan. 7, 2009, 20:03 EST) (stating that the release of LW5 was coupled with an announcement that LimeWire would operate a licensed retail operation on an advertising-based revenue model and offer consumers the option to purchase authorized copies of files). Similar to Clarke's aggressive Freenet free-speech campaign, this strategy is presumably to avoid Grokster infringement liability. LimeWire also discussed a plan to sell search term keywords and share advertising revenue. *Id.* By participating, copyright owners are arguably authorizing file trading without any compensation directly linked to the work. *Id.*

[141] Van Buskirk, *supra* note 140.

[142] *Id.* Users can also classify sharing based on a certain type of media – audio, video, documents and/or images. *Id.*

[143] *Id.*

[144] *Id.*

[145] Nate Anderson, *Darknets and the Future of P2P Investigators*, ARSTECHNICA, Mar. 5, 2009, http://arstechnica.com/tech-policy/news/2009/03/the-new-version-of-p2p.ars.

[146] *See id.*

[147] *Id.*

most enticing feature for users is that LW5 lets them privately share files of any size for free by transfering content directly from computer to computer.[148] This abrogates the traditional file size limitations of e-mail and other online file sending services.[149]

c. Improvements in Infrastructure, Interconnectivity and Network Effects

[39] As the U.S. telecommunications industry continues to grow, it will provide the infrastructure to support the spread of darknets. Peer-to-peer technology has been proven to be commercially popular, and Darknet technology will naturally follow suit. In 2006, P2P traffic accounted for two-thirds of all Internet traffic.[150] This is not surprising, considering the efficiency and efficacy of P2P technology for distribution of content. The rapid build-out of consumer broadband, the dropping price of storage, and the fact that personal computers are effectively establishing themselves as centers of home-entertainment will fuel the spread of darknets.[151] The rising popularity of collaborative websites and sharing platforms (such as YouTube) will create more shared content and better mechanisms to filter through that content. The Darknet will adopt some of these social networking and filtering mechanisms in order to improve network performance.[152] Experts predict that within a year "darknets should be able to offer the same performance as traditional P2P software by exploiting social networking."[153]

[40] Skeptics contend that the infrastructure does not currently exist to support a widespread shift to anonymity.[154] They argue that efforts to develop anonymous file sharing are self-limiting because true anonymity requires the elimination of

[148] Van Buskirk, *supra* note 140.

[149] *Id.*

[150] Pouwelse et al., *supra* note 9, at 702.

[151] BIDDLE ET AL., *supra* note 26, at 8.

[152] Pouwelse et al., *supra* note 9, at 709.

[153] *Id.* at 711. After tracking P2P networking for ten years, Pouwelse and his colleges predicted that by 2010, copyright laws would become fully unenforceable due to the continued mass usage of file sharing, lack of countermeasures, and availability of darknets. *See id.*

[154] *See* Lemley & Reese, *supra* note 29, at 1429.

any intermediaries.[155] Therefore, anonymous sharing can only occur amongst mini-networks of small groups of friends that do not scale.[156] This criticism does not account for recent improvements in scalability, as noted in the Freenet model. Moreover, the Microsoft engineers concluded that even if global, public peer-to-peer networks were eliminated through legal or technical means, small-world networks would likely provide a mechanism efficient enough to satisfy a large percentage of digital media consumers.[157]

[41] The small-world network effect explains the system of linking up of related groups of private networks to scale into larger network groups.[158] Interconnected small-world networks are comprised of affinity groups that exchange materials through private networks.[159] Even though the individual sets might be small, users can belong to several sets.[160] Those individual sets overlap (as in a Venn diagram) to form larger groups, and information flows freely and quickly between the groups.

D. The Darknet's Impact on Copyrights

1. The Darknet Precludes Copyright Enforcement on the Internet

[42] Recent technological developments involving darknets and P2P networking make the effective enforcement of copyright virtually impossible.[161] John Perry Barlow compared traditional copyright law to a sinking ship and described the futile efforts to save it: "Legal efforts to keep the old boat floating are taking three forms: a frenzy of deck chair rearrangement, stern warnings to the passengers that if she goes down, they will face harsh criminal penalties, and

[155] *Id.*

[156] *Id.*

[157] *See* BIDDLE ET AL., *supra* note 26 at 9.

[158] *See id.* at 3-4.

[159] *See generally* Pouwelse et al., *supra* note 9; OSKAR SANDBERG, DISTRIBUTED ROUTING IN SMALL-WORLD NETWORKS (2005), http://freenetproject.org/papers/swroute.pdf; OSKAR SANDBERG, SEARCHING IN A SMALL WORLD (2005), http://freenetproject.org/papers/lic.pdf.

[160] *See* BIDDLE ET AL., *supra* note 26, at 3-4.

[161] *See* Jacover, *supra* note 25, at 2209.

serene, glassy-eyed denial."[162] But, enforcement of copyrights through lawsuits and criminal sanctions is only possible if identification of the direct infringers and their infringing activity is possible.[163] The private and anonymous nature of darknets severely exacerbates this problem since individual (or even collective) file use is not traceable.[164] Moreover, without usage data, not only will traditional copyrights be archaic, but also any type of alternative incentive scheme for authors will be difficult or impossible to implement.

[43] Enforcing a contributory or vicarious liability regime against darknet service providers presents another challenge. Directly infringing activity on darknets is undetectable to all outsiders (including service providers), and darknets are capable of substantial non-infringing uses.[165] Users administer and lock darknets; therefore, service providers cannot monitor or control any activity.[166] Without a central server, it is difficult (if not impossible) to enforce an injunction.[167] Once software is distributed, it is difficult to remove all the downloaded copies in use, and users holding copies of open source darknet software can easily copy it, adapt new versions, and make it available throughout the Internet.[168]

---

[162] John Perry Barlow, *The Economy of Ideas*, WIRED, Mar. 1994, *available at* http://www.wired.com/wired/archive/2.03/economy.ideas.html (arguing that digital intellectual property rights must be revised because digital information can be freely obtained and copied). John Perry Barlow is a lyricist for the Grateful Dead and co-founder/executive chair of the EFF. *Id.*

[163] Jacover, *supra* note 25, at 2245.

[164] *See id.* Although the networks would be protected by encryption that could theoretically be decrypted, it would be impracticable, expensive, and time consuming for someone to unlock each small network. Also, privacy issues might arise regarding whether a user could be forced to unlock the codes without probable cause.

[165] *See, e.g.*, Sony Corp. of Am. V. Universal City Studios, Inc., 464 U.S. 417, 447 (1984).

[166] *See* BIDDLE ET. AL, *supra* note 26, at 10.

[167] Jacover, *supra* note 25, at 2245.

[168] *Id.*

2. The Darknet Nullifies Technological Protection Measures

[44] The primary effect of the Darknet is that it renders technological protection measures (TPMs) wholly unenforceable (or at least impracticable) as a solution for digital copyright management.[169] Some scholars predicted this shift might happen as early as this year.[170]

[45] Though its purpose was to warn Microsoft executives about the perils of TPMs, the Microsoft paper is one of the most comprehensive studies of the Darknet.[171] Based on a set of assumptions regarding the flow of information in the digital environment, the Microsoft paper warned that any "popular or interesting content" would inevitably leak into the Darknet.[172] Fred von Lohmann asserted that this failure would result because no content protection system had "yet been developed, nor [was] one likely to be developed," that could not be unlocked by at least one "expert attacker."[173] The engineers explained that once compromised by one sophisticated user, TPMs are effectively useless to restrict widespread redistribution where "users have the desire and capability to rapidly duplicate and propagate the formerly protected work."[174]

[46] Thus, with the spread of distributed networking, a single "leak" is enough to neutralize all TPMs for a particular work.[175] Without perfect protection, TPMs are useless at preventing subsequent copying.[176] Fred von Lohmann described this problem as a smart cow problem: "It only takes one smart cow to lift the latch on

[169] *See* BIDDLE ET AL., *supra* note 26, at 15.

[170] *See, e.g.*, Pouwelse et al., *supra* note 9, at 711.

[171] *See* BIDDLE ET AL., *supra* note 26, at 15.

[172] *Id.* at 2.

[173] Lohmann, *supra* note 116, at 640.

[174] *Id.* at 641; *see* BIDDLE ET AL., *supra* note 26, at 2 (noting the possibility that material can "enter the Darknet before copy protection occurs.").

[175] Lohmann, *supra* note 116, at 641-42 ("all TPMs leak"); *see also* BIDDLE ET AL., *supra* note 26, at 2.

[176] Symposium, *At the Crossroads of Law & Technology: Fifth Annual Conference, Alternative Methods for Protecting Digital Content*, 25 LOY. L.A. ENT. L. REV. 63, 67 (2004).

the gate and then all the less sophisticated cows just trod on out behind it."[177] He went on to explain that not every peer is circumventing. To the contrary, most are just copying because much of the content found in the Darknet has been pre-circumvented for their convenience.[178]

[47] A more recent scientific survey of a decade of peer production reiterated the idea that there seems to be no effective technological "impediments to darknet-based . . . file sharing technologies[, which are] growing in convenience, aggregate bandwidth and efficiency."[179] If darknets persist and become widespread, providing "low cost, high-quality service to a large group of consumers," the Darknet's free alternatives will be a substantial "competitor to legal commerce."[180] In fact, from an economic standpoint, TPMs might "act as a *disincentive* to legal commerce."[181] A securely protected file for sale is significantly less attractive to a potential user than an alternative that is an equally useful TPM-free version acquired from the Darknet.[182]

II. RELINQUISHING CONTROL OVER DIGITAL WORKS WILL ACHIEVE COPYRIGHT'S INTENDED GOAL

A. The Goal and Function of Copyright

[48] The paramount goal of copyright law is to promote progress in science and the useful arts and to encourage the creation and mass dissemination of a wide variety of expressive works.[183] Traditionally, copyrights have been the means by

---

[177] *Id.*

[178] *Id.* at 74 (stating that since the DMCA only protects against an act of circumvention, it has not successfully inhibited the availability of circumvented files in distributed networks).

[179] BIDDLE ET AL., *supra* note 26, at 14. *See generally* Pouwelse et al., *supra* note 9.

[180] BIDDLE ET AL., *supra* note 26, at 15.

[181] *Id.*

[182] *See id.*

[183] *See, e.g.*, Malla Pollack, *What is Congress Supposed to Promote?: Defining "Progress" in Article I, Section 8, Clause 8 of the United States Constitution, or Introducing the Progress Clause*, 80 NEB. L. REV. 754, 809 (2001). The Constitution grants Congress the power "to promote the Progress of Science and useful Arts by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." U.S. CONST. art. I, § 8, cl. 8.

which that goal is achieved.[184] As intellectual property has public-goods characteristics, the right to control the reproduction and dissemination of their works allows authors and publishers to recover their investment without the risk of being undercut in the market.[185] However, the control granted to authors is limited by the public's interest in preserving a vibrant public domain from which consumers and future authors may draw.[186] Thus, "copyright assures authors the right in their original expression, but encourages others to build freely upon the ideas and information conveyed . . . ."[187]

[49] Due to the Darknet, the current copyright regime is no longer an effective incentive to encourage the creation and dissemination of digital works. Therefore, the law must be restructured to ensure the continued promotion of progress in the digital era. One possible approach is ceding legal control to provide an incentive to create new digital works in the Darknet era.

B. Stronger Protection Measures are Unenforceable and Deter Innovation

[50] Faced with imminent technological challenges, scholars advise that copyright owners basically have two choices for remuneration: strive for stronger copyright protection or sacrifice control, embrace new technology, and seek out alternative methods of compensation.[188] As outlined above, the Darknet renders existing copyrights largely impotent on the Internet, and TPMs offer little solace to creators and distributors wishing to control access to their digital works.[189] It follows that increased protection is unlikely to succeed.

[184] Harper & Row Publishers, Inc. v. Nation Enters., 471 U.S. 539, 558 (1985) ("By establishing a marketable right to the use of one's expression, copyrights supply the economic incentive to create and disseminate ideas.").

[185] *See* Raymond Shih Ray Ku, *The Creative Destruction of Copyright: Napster and the New Economics of Digital Technology*, 69 U. CHI. L. REV. 263, 293 (2002).

[186] *Id.*

[187] Feist Publ'ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 349-50 (1991).

[188] Lohmann, *supra* note 116, at 642.

[189] *See supra* Part I.D.1.

[51] Those striving for stronger protection, stiff penalties, and perfect enforcement of their rights are likely doomed.[190] These individuals pursue impenetrable TPMs fortified by aggressive legal prohibitions against technological circumvention.[191] Following traditional copyright ideologies, it may seem intuitive that as copying becomes cheaper and easier, protection should increase proportionally because creators will be forced to compete with a greater number of copiers and copies.[192] However, stronger protection for digital works seems unlikely to succeed as the Darknet grows and smart cows become smarter.[193] According to the Microsoft engineers' Darknet assumptions, anything less than total success would mean total failure for any TPM strategy.[194] Not only is perfect control impossible to realize in the Darknet era, but stronger protection also upsets the balance copyright legislators endeavor to achieve between protecting authors' rights and granting the public access to works. For instance, the Digital Millennium Copyright Act (DMCA), enacted to bolster the effectiveness of TPMs by prohibiting circumvention, precludes uses of digital works that would be considered fair uses for identical analog works.[195] Preventing access to a digital work for purposes of parody or criticism impinges on users' First Amendment rights.[196] Additionally, stronger protection stimulates the production of less efficient technology and encourages darknets.

C. Relinquishing Control Over Digital Works Will Promote Progress

[52] Since stronger protection is not likely to have a positive effect, copyright owners must (by default) surrender control and embrace alternative methods of compensation.[197] Fortunately, absent traditional copyrights, digital technology

[190] Lohmann, *supra* note 116, at 642.

[191] *Id.*

[192] Ku, *supra* note 185, at 296.

[193] *See* Lohmann, *supra* note 116, at 642.

[194] BIDDLE ET AL., *supra* note 26, at 11.

[195] *See generally* 17 U.S.C. § 1201 (2006).

[196] *See* U.S. CONST. amend. I.

[197] Lohmann, *supra* note 116, at 642.

eliminates the need for distribution incentives and provides alternative incentive structures that will ensure the creation of new creative works.[198]

[53] Although procedures, processes, systems, and methods of operation are not protected by copyright per se,[199] legislation intended to promote progress should consider encouraging technological innovation in addition to the creation and dissemination of creative works. At a minimum, copyright should not protect authors' financial interests at the expense of encouraging inferior distribution technology. Professor Litman astutely noted that as long as widespread dissemination remains a central goal of copyright, "prohibiting sharing to protect the market for copy sales is exactly backward."[200] File sharing through centralized distributed networks is clearly a more effective and efficient medium for dissemination than either selling physical copies or distributing them through darknets. As described above, developments in the law that imposed liability on various market players shaped the development of Darknet architectures inferior to their P2P predecessors in terms of economic efficiency and social welfare.[201] Excessive caution to avoid liability chilled innovation and censored ideas and communication.[202] If the rise of the Darknet can be directly attributed to increasingly strong copyright protection and TPMs, then the fall of the Darknet will require weaker copyright protection and less technological control.

1. Copyright Shelters Encourage Innovation

[54] Historically, "copyright shelters and exemptions have . . . encouraged rapid investment and growth in new media of expression."[203] For example, despite severe opposition from the music industry, the Supreme Court ruled that making and selling piano rolls did not infringe any copyrights.[204] The player

---

[198] *See id.* at 646-47.

[199] 17 U.S.C. § 102(b) (2006).

[200] Jessica Litman, *Sharing and Stealing*, 27 HASTINGS COMM. & ENT. L.J. 1, 30-31 (2004) [hereinafter Sharing and Stealing].

[201] *See supra* Part I.B.

[202] *Id.*

[203] Jessica Litman, *Revising Copyright for the Information Age*, 75 OR. L. REV. 19, 27 (1996) [hereinafter Revising Copyright].

[204] White-Smith Music Publ'g Co. v. Apollo Co., 209 U.S. 1, 18 (1908).

piano ultimately led to the phonograph, which was the basis for the entire recording industry.[205] Similarly, by denying infringing activity, courts refused to allow the entertainment industry to control technologies such as radio, cable television, and the VCR.[206] The principle common to the development of each of those revolutionary technologies has been termed an "innovate first, make adjustments later" approach.[207] Innovators were not required to seek permission from industry incumbents prior to designing their products.[208] Generally, the rule has morphed into a chilling "permission first, innovation later" requirement.[209] Recent DMCA legislation makes it unlawful to circumvent TPMs without first obtaining authorization from the rights holder.[210] Also, in order to develop a device capable of playing a DVD, an innovator must first obtain a license from the DVD Copy Control Association, the industry group holding the necessary rights.[211]

[55] Traditional copyright protection is based on the argument that "without the incentives provided by copyright, entrepreneurs will refuse to invest in new media."[212] But there is empirical evidence to the contrary. "[N]ew media has flourished and became remunerative when people invested in producing and distributing them first, and sorted out how they were going to protect their . . . rights [or realize profits] only after they had found their markets."[213] Requiring

[205] Fred von Lohmann, *How Hollywood Has Been Trying to Disrupt Disruptive Innovation*, EETIMES, http://www.eetimes.com/disruption/essays/vonlohmann.jhtml (last visited May 20, 2010).

[206] *Id.*

[207] *Id.*

[208] *Id.*

[209] *Id.*

[210] *Id.*

[211] *Id.*

[212] Revising Copyright, *supra* note 203, at 28.

[213] *Id.* at 28-29 (noting that some market players seem to be more interested in gaining market share than in preserving the inviolability of their content, and many valuable software programs obtained their dominant market share by being made available to consumers for free (like Windows 3.1® and DOS®)). Professor even went so far as to speculate that all of the

licenses for several underlying pieces of technology or to minute parts of creative works can be especially chilling to new or relatively smaller market players.[214] These smaller market players tend to be the most innovative in terms of developing new technologies and discovering new ways to charge for value.[215] It was young, creative companies, free from legal liabilities and unencumbered by industry customs, which were responsible for developing the first MP3 technology.[216] That technology paved the way for a vibrant new digital music market and Apple's enormously successful iPod empire.[217] Additionally, new technologies are more vulnerable to legal challenges because it might be more difficult for courts to see their long-term value without empirical evidence.[218]

[56] Innovation works best when unfettered by governmental requirements.[219] Beyond direct restrictions, the mere threat of lawsuits is likely to deter a significant amount of innovation.[220] It seems that this threat is extending the reach of copyrights deep into the realm of the public domain and eclipsing legitimate uses of works.[221] In the past, the Motion Picture Association of America (MPAA), working in conjunction with the Federal Communications Commission, relied on copyrights mandating the inclusion of copy-protection technology in some home copying devices[222] to coerce companies (including RealNetworks and Microsoft)

unauthorized copies of software in circulation are part of the reason why the software market is booming. *Id.*

[214] *Id.* at 29.

[215] *Id.*

[216] Heather Green, *Commentary: Are the Copyright Wars Chilling Innovation?*, BUS. WK., Oct. 11, 2004, available at http://www.businessweek.com/magazine/content/04_41/b3903473 htm.

[217] *Id.*

[218] Lemley & Reese, *supra* note 29, at 1389.

[219] *Id.* at 1387.

[220] *Id.* at 1388.

[221] *Id.*

[222] *See* 47 C.F.R. §§ 73, 76 (2006).

to cut innovative features out of their media software programs.[223] Just before the release of LW5, Arista Records sued LimeWire, alleging copyright infringement for distributing file sharing software.[224] Presumably concerned that copyrights might be exceeding their appropriate grasp, the Electronic Frontier Foundation (EFF) submitted an amicus brief urging the court to adopt a standard of liability that would "not discourage the development of technologies with lawful and unlawful uses."[225] The EFF brief also argued that developers should not be held liable for copyright infringement based on misuses of their technology that they did not actively promote.[226]

2. Restructuring Digital Copyright Law

[57] Digital technology has enabled new uses (including syncing, remixing, and mash-ups) that do not necessarily coincide with the traditional bundle of copyright rights. To appropriately advance copyright's stated goal of promoting progress, copyright law should be revised to permit all uses of works that the creator makes available to the public in digital format.[227] Once a creator authorizes the release of a work in a digital format, all digital uses should be permitted, including reproduction, adaptation and modification, distribution, public performance, and public display of any digital content.

---

[223] Green, *supra* note 218. The omitted features permitted users to make arguably legal copies of TV programs and transmit them to a limited number of their own personal devices for personal viewing. *Id.*

[224] *See generally* Complaint, Arista Records LLC v. Lime Wire LLC, 532 F. Supp. 2d 556 (S.D.N.Y. 2008) (No. 06 CV 5936).

[225] Amicus Curiae Brief of the Elec. Frontier Found. et al. at 11, Arista Records LLC v. Lime Wire LLC, 532 F. Supp. 2d 556 (S.D.N.Y. 2006), (No. 06 CV 5936).

[226] *Id.*

[227] This is an important limitation. Copyright law expressly recognizes an author's right to control the first publication of their work. 17 U.S.C. § 106 (2006). The Supreme Court confirmed that the right of first publication encompasses not only the choice whether to publish at all, but also the choices of when, where, and in what form first to publish a work. Harper & Row Publishers, Inc. v. Nation Enters., 471 U.S. 539, 551 (1985). Since traditional copyrights will remain intact for physical copies, copyright owners necessarily retain the right to choose whether to release their works in digital format, and format-shifting should be outlawed. The distribution of physical copies of some types of works will continue to exist and will require significant capital investment.

[58] Promoting progress requires that the public be able to read, view, and listen to available works, and that they "be able to learn from them: to extract facts and ideas from them, to make them their own, and to be able to build on them."[228] Permitting all digital uses would enable consumers and would-be future producers to benefit fully from the works available to them. Professor Litman argues that using copyrights to encourage dissemination actually ensures the public's ability to enjoy those works by deterring creators from completely preventing access through self-help mechanisms.[229] In the Darknet era, however, authors rely on copyright protection to enforce their self-help technological measures to increase technological control over their works, thus locking those works away from the public. Since perfect control is neither possible nor socially desirable, it is better to permit copying for the purpose of distributing works for the enjoyment of the public. Further, an all-encompassing exception would prevent underproduction and eliminate uncertainty as to whether a particular behavior is infringing. Under this revised regime, P2P file sharing would not constitute infringement and P2P service providers would not be liable for infringement.

a. A Commercial/Non-Commercial Distinction is Unnecessary

[59] A number of scholars have extolled the virtues of authorizing non-commercial uses of other people's works.[230] This might seem like a tempting option, especially since the public seems to believe that copyright law distinguishes between commercial and private behavior.[231] But enforcing a non-commercial rule is impracticable in the digital realm since the line between commercial and non-commercial uses is increasingly blurred.

[60] Consumers often advance a general fairness argument that copying of other people's works is okay so long as the copier is not making money.[232] This public attitude likely stems from uncertainty in judicial and legislative attempts to define non-commercial uses.

---

[228] Revising Copyright, *supra* note 203, at 33.

[229] *Id.*

[230] *See* Sharing and Stealing, *supra* note 200, at 33.

[231] *See* Revising Copyright, *supra* note 203, at 40.

[232] *Id.*

[61] The Audio Home Recording Act explicitly protects private, "non-commercial" music copying.[233] The accompanying Senate report, however, broadly and vaguely defines non-commercial purposes as those not made for "indirect or direct commercial advantage."[234] Apparently, consideration is not required to classify a transaction as being for a commercial purpose since a sale is not required to demonstrate commercial use and obtaining a service for free that users would normally be required to purchase constitutes a commercial use.[235] Additionally, non-commercial protection is specifically denied to many devices and uses, most notably the use of personal computers and hard drives to make copies.[236] For example, electronically sending a file to an anonymous recipient is not a personal use.[237] The No Electronic Theft (NET) Act goes so far as to criminalize copying for purposes of commercial advantage or private financial gain,[238] which includes the receipt of "anything of value."[239] It seems possible to construe almost any transaction as being for indirect commercial benefit or private financial gain.

[62] In proposing a non-commercial use levy to compensate authors of digital works, Professor Netanel's definition of non-commercial included any use where "the individual is not selling copies of, access to, or advertising in connection with the copyright-protected work."[240] He specifically protected an "individual's receipt of other works in digital format over P2P file swapping networks."[241]

---

[233] 17 U.S.C. § 1008 (2006).

[234] *See* Audio Home Recording Act of 1992, S. 1623, 102d Cong. § 1002.

[235] A&M Recs., Inc. v. Napster, Inc., 239 F.3d 1004, 1015 (2001).

[236] *Id.* at 1024-25 (noting that "computers are not digital audio recording devices because their 'primary purpose' is not to make digital audio copied recordings").

[237] *Id.* at 1015.

[238] No Electronic Theft (NET) Act, Pub. L. No. 105-147, 111 Stat. 2678 (1997) (codified at 17 U.S.C. §§ 101, 506-07, 18 U.S.C. §§ 994, 2319-20, 28 U.S.C. § 1498) (applying criminal penalties to copyright infringement even when no direct financial benefit was received by the infringer).

[239] *Id.*

[240] Neil Weinstock Netanel, Impose a Noncommercial Use Levy to Allow Free Peer-to-Peer File Sharing, 17 HARV. J.L. & TECH. 1, 42-43 (2003).

[241] *Id.* at 43.

However, Netanel left the term "selling" undefined, creating the same ambiguity that exists under current interpretations of non-commercial purposes.[242] If a commercial/non-commercial distinction were made, content distributors and service providers could easily escape liability by setting up their organizations as non-profit agencies or by bartering and cross licensing to avoid transactions that would otherwise be considered commercial sales. Business models that do not charge for content, but profit through alternative channels such as advertisements or subscriptions, might ride the fence if they support user-generated content, since service providers do not control whether their content contains potentially infringing work.[243]

[63] Finally, the distinction between commercial and non-commercial transactions might be irrelevant since TPMs will be largely ineffective.[244] Most content, especially popular works, will be available for free in the Darknet, so the cost of content will approach zero.[245] It will not be profitable to sell any digital goods.[246]

3. The Effects of a Digital Use Exception

a. Promote Innovation

i. Develop Superior Distribution Technology

[64] A digital use shelter would serve the public interest by promoting innovation. If network developers were free from potential secondary liability, they would have an incentive to promote superior P2P systems instead of darknets. Due to the benefits from the reduction in bandwidth use on their servers, accomplished by shifting the sharing to users' computers, ISPs are the main developers and purchasers of P2P technology.[247] Without risk of liability, ISPs

---

[242] *See id.* at 42-43.

[243] *See* Bono, Op-Ed, *Ten for the Next Ten*, N.Y. TIMES, Jan. 3, 2010, at WK10, *available at* http://www.nytimes.com/2010/01/03/opinion/03bono.html (urging more tracking of Internet content to protect copyrighted materials).

[244] *See supra* Part I.D.2.

[245] *See id.*

[246] *See id.*

[247] *See* Elkin-Koren, *supra* note 30, at 22.

and entrepreneurs would presumably invest in the most economically efficient and socially desirable technology, which in this case is centralized distributed networking. There is evidence of this in China, where relaxed regulations led to the development of the world's fastest distributed networks, including Blin.cn, which is capable of reaching speeds up to fifty times faster than BitTorrent.[248] According to a Chinese Internet expert, the lack of copyright enforcement in China permitted the development of these protocols.[249]

ii. Quash the Darknet

[65] Most importantly, a digital use exception will keep users out of the Darknet. Current darknets impose additional costs on consumers because they are slower, less efficient and less user-friendly than their traditional P2P counterparts.[250] Moreover, darknets carry social costs that traditional P2P networks do not incur because true anonymity precludes building a reputation or increasing one's popularity.[251] Permitting digital copying will derail the Darknet juggernaut by encouraging the development of better distribution technology that is more attractive to consumers. In turn, this will provide the infrastructure required for remuneration. The Microsoft engineers advised that in order to compete with the Darknet, distributors must compete on the Darknet's own terms: "convenience and low cost rather than additional security."[252] If programmers devote time to developing the most efficient P2P technology, consumers will naturally gravitate away from fallible darknets.

---

[248] Duncan Riley, *50x Faster Than BitTorrent: I Want*, TECHCRUNCH, Oct. 16, 2007, http://www.techcrunch.com/2007/10/16/50x-faster-than-bittorrent-i-want (interviewing web 2.0 expert Kaiser Kuo, who discussed the rapid growth of P2P services in China, in contrast to their slow growth in the United States).

[249] *Id.*

[250] *See supra* Part I.C. New Darknet technology is improving. More efficient darknets, combined with switching costs, will increase the risk that a user would choose to remain in a darknet rather than convert to a traditional P2P model. Therefore, action should be taken sooner rather than later to implement this shift in the law.

[251] *See generally id.*

[252] BIDDLE ET AL., *supra* note 26, at 15.

[66] In the United States, the primary use of darknets is to share files (rather than circulate political messages),[253] so features that enhance the file sharing experience are presumably more important to consumers than the ancillary privacy benefits they enjoy in darknets.[254] A digital use exception removes the threat of litigation, thereby lowering the perceived costs of traditional P2P networks for both developers and consumers. Injecting traditional P2P networks with content that is unlocked and more likely to be free of viruses than content on the Darknet would also help make P2P networks a more attractive choice for consumers.[255] Given the cheaper, safer, and more convenient choice, consumers would opt to use traditional P2P networks, where their identities and activities are observable.[256] Ensuring that users remain where their behavior can be monitored is the key to providing authors and the content industry with opportunities to receive compensation for their works.[257]

b. Promote Progress and Protect Free Speech

[67] As noted above, in the absence of digital copyrights, the proliferation of P2P networks would stimulate peer production, and the resulting increase in collaboration and communication would produce better quality works.[258] Distributed networking will also secure free speech because eliminating liability removes the incentive for ISPs to filter and block access to content on their networks. Further, a digital use exception would limit censorship by minimizing

[253] Douglass Heingartner, *Software Piracy is in Resurgence, With New Safeguards Eroded by File Sharing*, N.Y. TIMES, Jan. 19, 2004, at C9, available at http://www.nytimes.com/2004/01/19/technology/19soft.html?pagewanted=1.

[254] Although most users would revert to traditional P2P networks, some darknets would likely continue to exist to serve those customers preferring privacy. Thus, darknets could still be used to protect free speech.

[255] Heingartner, *supra* note 255 (quoting Eric Garland, CEO of BigChampagne P2P monitoring firm, as saying "[t]he only way to really marginalize online piracy is to make online retail so transparent, so convenient and so appealing that when you're faced with two icons—one that's an unknown, perhaps virus-infested crack on Kazaa, and the other that's double-click to download the legitimate version," users will choose the latter).

[256] *See id.*

[257] *See id.*

[258] *See supra* Part II.C.3.a.

the termination of entire P2P systems that block legitimate, non-infringing activity along with potentially unauthorized acts.

4. A Monopoly is Not Required to Incentivize the Creation of Digital Works

a. Monopolistic Copyrights for Digital Works Do Not Benefit Society

[68] In the shadow of the Darknet, control over digital copies should be relinquished to generate optimal market conditions and adequate financial incentives for the creation and distribution of new works.[259] In the absence of digital copyrights, creators and distributors would be free to utilize new technologies to construct alternative business models that are profitable and sustainable.[260] Although society may grant exclusive rights as an incentive to produce, the grant is subject to the will and convenience of society and there is certainly no obligation to do so.[261] Thomas Jefferson provided the following illustration of the principle:

> Society may give an exclusive right to the profits arising from inventions, as an encouragement to men to pursue ideas which may produce utility, but this may or may not be done, according to the will and convenience of the society, without claim or complaint from any body. . . . [T]he exclusive right to invention [is] given not of natural right, but for the benefit of society . . . .[262]

[259] *See id.*

[260] *See* Lohmann, *supra* note 116, at 642.

[261] Letter from Thomas Jefferson to Isaac McPherson (Aug. 13, 1813), *available at* http://www.temple.edu/lawschool/dpost/mcphersonletter.html.

[262] *Id.* The Supreme Court confirmed this principle stating

> the monopoly privileges that Congress has authorized are neither unlimited nor primarily designed to provide a special private benefit . . . It is intended to motivate the creative activity of authors and inventors by the provision of a special reward, and to allow the public access to the products of their genius after the limited period of exclusive control has expired.

Sony Corp. of Am. V. Universal City Studios, Inc., 464 U.S. 417, 429 (1984).

When applied to digital works, existing copyright laws are detrimental to the social welfare and restrain innovation.[263]

[69] To the extent that adequate financial incentives or market conditions exist to incentivize the creation and distribution of new works, copyrights are superfluous; so it is advisable not to recognize those protections.[264] In the Darknet era, existing copyrights no longer provide the proper incentive for the creation of digital works and should be abrogated to foster market conditions that will be an adequate substitute.[265] Abandoning control of digital works will provide the appropriate incentive regime necessary to achieve copyright's goal of stimulating artistic creativity for the public good.[266]

b. Digital Copyrights Are Economically Inefficient

i. Digital Copyrights to Incentivize Distribution Are Redundant

[70] By examining the incentives for creating and distributing works separately, Professor Raymond Ku explains that there is no longer reason to

[263] If this digital use exception were to apply retroactively, existing copyright holders might have a claim that the change constitutes a taking under the Fifth Amendment, whereby private property cannot be taken for public use without just compensation. *See* U.S. CONST. amend. V. Copyrights are likely considered private property rights since they are freely alienable. See 17 U.S.C. § 201(d)(1) (2006). There is limited precedent on the matter. *See, e.g.*, Ruckelshaus v. Monsanto Co., 467 U.S. 986, 987 (1984) (holding that the federal government effected a taking of Monsanto's property when it disclosed his trade secrets). To constitute a taking, however, the government must deprive a copyright holder of the entire value of his property. *Id.* at 1005 (quoting United States v. Gen. Motors Corp., 323 U.S. 373, 378 (1945). As this article explains, not only is it possible for digital works to create value absent copyrights, it might be the only way for future authors of digital works to profit. Thus, the government may be justified in implementing such a scheme. Additionally, it may be that a digital use exception would conflict with international obligations under the Agreement on Trade-Related Aspects of Intellectual Property Rights. *See* Agreement on Trade-Related Aspects of Intellectual Property Rights, art. 13 (1994), http://www.wto.org/english/docs_e/legal_e/27-trips.pdf. That Agreement requires that limitations or exceptions to exclusive rights must not conflict with a normal exploitation of the work. Id. Similar to the argument against takings, it can be argued that a digital use exception might be the only way for authors of digital works to exploit their works in the Darknet era. A full discussion of these matters is beyond the scope of this paper.

[264] Ku, *supra* note 185, at 293.

[265] *See supra* Part I.D.

[266] *See* Twentieth Century Music Corp. v. Aiken, 422 U.S. 151, 156 (1975).

provide copyright protection for digital works.[267] "Until recently, most means of mass dissemination required a significant capital investment."[268] Traditionally, a copyright owner's exclusive right to control the reproduction and distribution of information was necessary to prevent members of the public from free riding, enjoying the benefits of the work without contributing to defray real publication costs.[269] Artificial property rights, however, are not appropriate to encourage public dissemination of digital works because consumers internalize reproduction and distribution costs through distributed networking.[270] As noted by Ku, because digital distributed networking replaces many traditional publication and distribution functions, copyrights result in a faulty transfer of wealth.[271] Further, sharing copies through distributed networking minimizes marketing costs and efficiently responds to consumer demand.[272] In fact, the features of distributed networking which increase a work's popularity enable consumers to recapture a portion of the excess incentive available for popular works.[273] Allowing creators to recover costs that are already absorbed by the public is double dipping[274] and

[267] Ku, *supra* note 185, at 263.

[268] Sharing and Stealing, *supra* note 200, at 2.

[269] Ku, *supra* note 185, at 301.

[270] *Id.*

[271] *Id.* at 319 (arguing that because the costs of creation and distribution are already borne by the public, which does not have a property right, any price a copyright holder demands for a digital work represents monopoly profits). The wealth transfer from the consumer to the copyright holder can be considered an unjustifiable transfer of wealth--specifically, as a taking, class legislation, or capture. *Id.* at 319 n.368.

[272] *See supra* Part I.B.2.

[273] Glynn S. Lunney, Jr., *The Death of Copyright: Digital Technology, private Copying and the Digital Millennium Copyright Act*, 87 VA. L. REV. 813, 821 (2001) (explaining that private copying can boost a work's popularity thereby increasing sales for the author). This type of private copying enables consumers to recapture the excess incentive that exists for popular works. *Id.* Because of the self-regulating character of private copying, prohibiting private copying only enriches copyright owners. *Id.* at 882. Thus, it is outside the congressional authority under the Patent and Copyright Clause. *Id.*

[274] Ku, *supra* note 185, at 263; *see* John Borland & Jim Hu, *Napster Model Could Make ISPs Subsidize Record Labels*, CNET NEWS, Feb. 21, 2001, http://news.cnet.com/news/0-1005-200-4890649.html (quoting Bertelsmann E-Commerce Group President Andreas Schmidt as stating, "[i]f we [allow creators to recover costs that are already absorbed by the public], we will have

renders the traditional copyright scheme little more than "an argument for protecting content distributors in a world in which middlemen are obsolete."[275]

ii. Digital Copyrights Are Not the Best Incentive for Creation

[71] Professor Ku also demonstrated that exclusive rights created by copyrights are neither necessary nor the most efficient means of encouraging creation.[276] As discussed above, the lowered cost of peer production compensates for some underproduction.[277] Without high publication and distribution expenses for digital works, the fixed, one-time cost of creation is the only cost to make content available to the public.[278] So long as file use and user behavior is visible, the alternative business models discussed in section III would allow efficient recovery of the cost.

III. MARKET FORCES WILL SUPPLY THE INCENTIVE TO CREATE AND DISSEMINATE IDEAS

[72] As peer production thrives on distributed networks, amateur volunteer creation will compensate for some underproduction that might be caused by a digital use exception. This solution is incomplete. While volunteer expression is certainly an indispensible element of a democratic society, the creation of many expressive works, including full-length motion pictures, novels, television shows, and investigative journalism, requires a significant material commitment of time, expertise, and money.[279] While many authorities agree in some permissive use of

almost no additional costs but have additional revenues coming in . . . all these delivery costs, all these distribution costs, go away.").

[275] Ku, *supra* note 185, at 263.

[276] *Id.* at 306. While Ku's article is a discussion of music, the principle is likely equally applicable other media.

[277] *See supra* Part II.C.2.

[278] Ku, *supra* note 185, at 305.

[279] Netanel, *supra* note 240, at 75.

expressive works, they disagree as to the proper way to incentivize creation should the law change.[280]

[73] The main challenge to voluntary or compulsory licensing systems is that consumers are not willing to pay for content when they can obtain a sufficient or superior substitute for free on the Darknet.[281] Regardless, if it is permissible to use digital works, market forces will ensure that intermediaries (including publishers, distributors, and service providers)[282] and creators receive compensation for their works.[283] Empirical evidence suggests consumers are willing to pay for the ancillary products and services they value, therefore, it is possible for publishers, distributors, and service providers to profit by delivering content bundled with valuable alternatives or collateral products and services that consumers desire.[284] It might also be possible to collect funds from consumers by levying a tax on necessary media-related goods or services.[285] Additionally, intermediaries could profit through advertising.[286] While advertising revenue depends on content to drive consumer traffic to websites, intermediaries also value traffic for the information consumers leave behind regarding their behavior and preferences.[287] Just as consumers will pay intermediaries for valuable ancillary goods and

[280] *Compare* Netanel, *supra* note 240, at 43-44 (advocating a noncommercial use levy of all consumer products and services whose value is substantially enhanced by file sharing), *with* John F. Duffy, *The Marginal Cost Controversy in Intellectual Property*, 71 U. CHI. L. REV. 37, 52 (2004) (criticizing such systems).

[281] *See* Ku, *supra* note 185, at 278.

[282] *See* 17 U.S.C. § 512(k) (1999) (defining "service provider" as "an entity offering the transmission, routing, or providing of connections for digital online communications, between or among points specified by a user, of material of the user's choosing, without modification to the content of the material as sent or received" or "a provider of online services or network access, or the operator of facilities therefor").

[283] *See* Peter K. Yu, *P2P and the Future of Private Copying*, 76 U. COLO. L. REV. 653, 740 (2005).

[284] *See* Lohmann, *supra* note 116, at 645-46.

[285] *See* Netanel, *supra* note 240, at 80-81.

[286] *See* Yu, *supra* note 283, at 736.

[287] *See id.*

services, intermediaries will commission creators to provide original content that drives traffic to their sites and sells their corresponding services.[288]

A. Peer Production and Volunteerism

[74] Volunteerism and amateur works will represent a large portion of new works including original materials like blogs, videos, and music, as well as adaptations such as mash-ups and remixes.[289] Innovative technology and distributed networking encourage peer production and spur output by reducing the overall cost of creating and distributing new works.[290] If protected by a copyright shelter, prosumers will voluntarily donate creative resources to create, publish, and disseminate their own digital media, thereby flooding the market with amateur works.[291] These creators might benefit in non-monetary ways, such as reputation or the simple enjoyment of creating the work. Realistically, however, other resources might be necessary to recoup real costs of creation and encourage the production of quality goods.

B. Consumers Will Not Pay For Content When a Free Alternative is Available

1. Voluntary Collective Licensing: Pay to Use

[75] Voluntary collective licensing regimes operate by offering consumers the freedom to use content in exchange for a fee.[292] Instead of seeking permission from each individual rights-holder, consumers purchase use rights from collection societies that aggregate copyrighted content and manage the collection and

[288] *See id.*

[289] *See* Daryl Lim, *Beyond Microsoft: Intellectual Property, Peer Production and the Law's Concern with Market Dominance*, 18 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 291, 314 (2008).

[290] *See id.* at 301-04.

[291] Lemley & Reese, *supra* note 29, at 1433.

[292] *See* ELEC. FRONTIER FOUND., A BETTER WAY FORWARD: VOLUNTARY COLLECTIVE LICENSING OF MUSIC FILE SHARING 1 (2008), at 1, http://www.eff.org/files/collective_lic_wp.pdf.

distribution of funds.[293] The scheme is voluntary because consumers, creators, and rights holders choose whether they will participate.[294]

[76] In light of the Darknet, the primary challenge to this regime is that consumers are simply unwilling to pay for content.[295] The EFF endorses this model and proposes the distribution of a five-dollar monthly fee to rights-holders; based on the popularity of their works.[296] The EFF authors believe that as long as the fee is reasonable, the majority of file sharers will opt to pay rather than engage in complex evasion efforts.[297] Before darknets, five dollars a month would have seemed like a small price to pay compared to the severe penalty a consumer would face in an industry lawsuit as well as to the increasingly high transaction costs due to TPMs.[298]

[77] This scheme, however, is unlikely to prosper, as the Darknet becomes a substantial competitor to legitimate commerce. Even a low monthly fee would seem unreasonable compared to a free, unrestricted substitute that does not carry the threat of a lawsuit. This scheme carries a transaction cost for the user of locating the proper collecting society, visiting its website, and executing the payment transaction.[299] The cost increases if a consumer must visit multiple collection societies to gather permission to use all the content they desire. This

[293] *Id.*

[294] Barry M. Massarsky, *The Operating Dynamics Behind ASCAP, BMI and SESAC, The U.S. Performing Rights Societies*, http://www.cni.org/docs/ima.ip-workshop/Massarsky.html (last visited May 20, 2010). Existing systems are used by collective rights organizations (such as ASCAP, BMI, and SESAC) and copyright clearinghouses. *Id.* By paying a flat fee, anybody can make a public performance of songs in the repertories of these organizations, which will collect the license fees and distribute the proceeds to their members). *Id.*

[295] *See* ELEC. FRONTIER FOUND., *supra* note 292, at 5.

[296] *Id.* at 1.

[297] *Id.*

[298] Yu, *supra* note 283, at 714.

[299] In the time it takes a consumer to find the collection society website, determine whether that organization controls the particular content they seek, and enter their credit card information (all this before even searching and downloading content), the consumer could have easily clicked on a folder on their desktop to access the Darknet, located a file, and downloaded it for free.

might be especially problematic where a consumer is searching for permission to use marginal content.

[78] Even without darknets, a voluntary system may also encourage free riding by allowing a group of friends to purchase one membership and share all of the content outside the system.[300] Because sharing is easy to do and virtually impossible to trace, Darknets merely make this possible on a larger scale.[301] Since TPMs will be largely ineffective in the Darknet era, it will be difficult to keep materials out of the hands of consumers that have not paid. Additionally, if consumers continue to share in darknets without detection, it will be difficult or impossible to measure the popularity of works to determine the appropriate distribution of funds.

[79] Moreover, the expected flood of peer production might pose a significant threat to a voluntary system. Even with an opt-in system, all amateur producers could claim they are entitled to a share of the royalty pool. Also, since peer production encourages collaboration, and copyright has traditionally avoided value judgments, determining who should be entitled to receive compensation will be difficult. Peer-produced content is often mashed-up or remixed from pre-existing works, often appropriating only a tiny fraction of the underlying work.[302] It will be impracticable, if not impossible, to measure the use of a particular work in those instances. Thus, collection agencies will have to deal with millions of amateur producers and might have to divvy up the pool of funds into micropayments, thereby reducing the possibility of reasonably compensating creators.

2. Compulsory Licensing: Use, Then Pay

[80] Under a compulsory licensing scheme, consumers are free to use protected works without first seeking permission from the copyright owner, but they are required to pay a statutory fee.[303] Similar to voluntary collective licensing regimes, rights holders divide the collected fee.[304] In contrast to voluntary

[300] Yu, *supra* note 283, at 715.

[301] *See id.*

[302] *See* Netanel, *supra* note 240, at 3.

[303] *See* Yu, *supra* note 283, at 704.

[304] *Id.*

collective licensing, consumers and rights-holders cannot choose whether to participate.[305] The government or an independent body decides what will be subject to payment and sets the rates.[306] This type of system is most often imposed as a compromise to resolve market failure and promote innovation.[307] It is doubtful that compulsory licensing would compensate creators in the Darknet era for most of the same reasons voluntary licensing would fail.

[81] It is unlikely that charging a compulsory fee would be a sufficient remedy because consumers are unwilling to pay for content where even a small fee seems unreasonable given that there is a free alternative in the Darknet. Even if users could locate rights holders through the agencies that collect and distribute funds, they still face transaction costs in executing payments they do not incur in the Darknet. Although the payment is compulsory, it will be unenforceable because consumers will retreat to the Darknet to share privately, and TPMs will be an ineffective impediment. Moreover, a blanket fee would be difficult to distribute based on popularity if use is undetectable. Even if the fee could be collected on a per-use basis, it would be difficult to determine pricing and distribution since use is often *de minimis*, and consumers might imperceptibly mix several works together.

C. Consumers Will Compensate Intermediaries

1. A Levy System

[82] Since consumers refuse to pay for content, some scholars propose imposing a statutory levy on related goods or services purchased by consumers to raise funds for the creation of new works.[308] The levy scheme is derived from the compulsory license model except, rather than accounting for fees based on the use of content, a levy is automatically collected on the sale of software, services, or

---

[305] *See id.*

[306] *See id.*

[307] *See id.* at 704-713 (providing a discussion of compulsory licensing). Compulsory licensing has been used in the U.S. since it was established in the 1909 Copyright Act for purposes of musical compositions. 17 U.S.C. § 1(e) (1952) (repealed 1978); *see also* Copyright Act of 1976, 17 U.S.C. §§ 111, 115-16, 118 (2006) (adding compulsory licenses for jukeboxes); Copyright Act of 1976, 17 U.S.C. § 118 (2006) (adding compulsory licenses for public broadcasting); Copyright Act of 1976, 17 U.S.C. § 111 (adding compulsory licenses for cable television).

[308] *See, e.g.*, Netanel, *supra* note 240, at 4.

hardware that are related to digital media.[309] Admittedly, a levy system solves many of the problems of voluntary or compulsory licensing schemes. But the remaining challenges are insurmountable, and a levy is not necessary to compensate creators.

[83] Fee collection in the levy system is a reasonably viable task that minimizes the transaction costs associated with collecting fees in the licensing models discussed above. Payment is compulsory, and, unlike content, hardware and services do not have a free Darknet equivalent.[310] Collection of the levy can be combined with payments the consumer is already required to make in order to enjoy products or services related to digital media use. As this would essentially pass the tax on to consumers through increased prices, consumers would indirectly pay for access to content.[311] "Likely candidates for taxation include Internet access, P2P software and services, computer hardware, consumer electronic devices (such as CD burners, MP3 players, and digital video recorders) used to copy, store, transmit, or perform downloaded files, and storage media (like blank CDs) used with those devices."[312] Although it is possible to collect a fee under the levy regime, it will remain difficult to set an optimal surcharge price, and some consumers would pay for content they do not use.[313]

[84] It is unclear whether imposing a levy would chill innovation. Some scholars contend that imposing a levy is essentially the same as enacting a third-party liability rule since taxing innovation will naturally discourage it to an extent.[314] It is more likely that the cost would be passed on to consumers instead

[309] Lemley & Reese, *supra* note 29, at 1406. The Audio Home Recording Act of 1992 (AHRA) enacted a similar plan, which provides for a levy on all blank digital audio media and digital audio recorders, with the revenue allocated among music copyright owners. 17 U.S.C. §§ 1004-07 (2006). Similar systems exist or are being implemented in Canada and the European Union, where computer purchasers pay a fee (currently twelve Euros in Germany) into a fund to compensate copyright owners. Lemley & Reese, *supra* note 29, at 1406-07.

[310] *See* Lemley & Reese, *supra* note 29, at 1407-08.

[311] Jacover, *supra* note 25, at 2253.

[312] Netanel, *supra* note 240, at 4.

[313] Lemley & Reese, *supra* note 29, at 1408-09 (arguing that whether the government or a private group sets the levy rate, "they will not likely face the discipline of the market [so there is a risk] they will not do so at a market-clearing price.").

[314] Lemley & Reese, *supra* note 29, at 1408-09.

of stifling innovation with liability rules.[315] Further, imposing a tax on wide categories of goods eliminates the possibility that service and product providers will be at a competitive disadvantage.[316] There is also a risk that pricing entire categories of new goods or services too high for consumers to adopt these methods will cause them to fail before the world has an opportunity to understand their full potential. Additionally, taxing a broad range of products increases the likelihood that some consumers will pay for content they do not use.

[85] The greatest obstacle with a levy system is distributing the funds. If files were not exchanged on darknets, it would be possible to use digital tracking and metering technology to measure consumers' actual use and valuation of works.[317] Funds could probably be distributed accordingly.[318] But, even if it were possible to account for the fee on a per-use basis, it would be difficult to determine pricing and distribution, since consumers will often use only partial works. Additionally, if a system is designed with the capability of monitoring all consumption, and it is reasonably easy for creators to subscribe to receive funds, a flood of amateur creators would likely demand payment for their works even though they currently display them for free. Like collective and compulsory licensing schemes, forcing the levy regime to dole out its limited funds in micropayments amongst all possible players would be futile. It is doubtful that creators of new content would digitally identify all underlying work to make it traceable.[319] If automatic digital identification is impossible, or if copying technology lacks the ability to reproduce metadata properly, prosumers are unlikely to comply.

[315] *See* Jacover, *supra* note 25, at 2253.

[316] *See* Netanel, *supra* note 240, at 21.

[317] *Id.* at 29.

[318] *Id.*

[319] *Id.* at 57 (suggesting that it might be beneficial to require creators and P2P disseminators of modified versions of works to identify the author of the underlying work). They could also be required to leave any copyright management information embedded in the underlying work intact. *Id.*

2. Consumers Will Pay for the Ancillary Goods and Services They Value

a. It Is Possible to "Compete with Free"

[86] Darknets offering of perfect, unrestricted copies of works that are easily accessible at no cost, will force copyright owners to "compete with free."[320] Traditional, non-digital industries have proven this is both possible and profitable.[321] Examples include bottled water, cable television, private education, and Starbucks coffee.[322]

[87] Although consumers are reluctant to pay for content, they have demonstrated that they are willing to pay for ancillary goods and better service, even when they are able to obtain identical or substantially similar versions of the content at no cost.[323] Therefore, service providers can lure consumers away from free darknet works by offering a superior alternative at a competitive price.[324] Moreover, it becomes increasingly possible to cross-subsidize as the cost to create and distribute content approaches zero.[325] When bundled together with other goods or services, consumers seemingly pay for content, but the actual value to

[320] Lohmann, *supra* note 116, at 644.

[321] *Id.*

[322] *Id.* Bottled water competes with tap water. Consumers pay for cable television when broadcast stations are available for free. Free public education is mandated by the government. A twelve-ounce cup of Starbucks coffee starts at about $1.50 while coffee is free at most office buildings or costs about a quarter per cup to brew at home. Starbucks Newsroom, Mar. 9, 2010, http://news.starbucks.com/article_display.cfm?article_id=337.

[323] *See* Lohman, *supra* note 116, at 644.

[324] *See* Jacover, *supra* note 25, at 2247. Michael Robertson, President and CEO of MP3.com, made a similar comment about the need to take affirmative steps in providing music online: "Some music fans will always copy songs illegally . . . but if you make it easy enough for them to pay for music on the Net, the majority of them will." Julian Dibbell, *The Record Industry's Digital Daze*, ROLLING STONE, Nov. 26, 1998, at 104.

[325] Chris Anderson, *Free! Why $0.00 Is the Future of Business*, WIRED, Feb. 25, 2008, *available at* http://www.wired.com/techbiz/it/magazine/16-03/ff_free? (noting that in a competitive market like the Internet, the cost to consumers of many aspects of technology are approaching zero: "Storage now joins bandwidth (YouTube: free) and processing power (Google: free) in the race to the bottom.").

the consumer derives from the auxiliary product or service they receive with that content.[326]

b. Alternative Business Models

[88] Entrepreneurs have proven highly capable of developing new ways of extracting value from the Internet.[327] A wide variety of sustainable business models, including cross-subsidization, bundling or tying, and loss leading,[328] permit businesses to recognize profits.[329] Either successful business models offer consumers superior quality, convenience, or auxiliary services; or they tie primary content to a valuable element or feature that cannot be easily reproduced.[330] Subscription or paid services offer convenience, allowing consumers to easily locate desired content, time- and space-shift compatibly formatted files, store and organize collections, and easily share files.[331] Apple's iTunes had sold over five billion songs as of June 2008, when the same music and video content was clearly

[326] For instance, I am personally quite entrenched in Apple's iMedia empire. Even though I could easily locate free versions of content on the Internet, I do not mind paying $.99 per song or $1.99 per TV show on iTunes. For me, the value is in the convenience and quality of iTunes' services. I use Apple's free software to organize my library and create customized playlists. All of my iMedia comes free of viruses, in a reliable and consistent format that is interoperable with my mobile devices. Besides digital portability, I am free to format-shift most of the content (for my own personal use, of course) to a CD or DVD to watch on my TV. The iTunes store is usually the only place I have to search for new music, and I appreciate that songs are available for purchase on their public release date. I can listen to samples and browse reviews of media before I purchase them. iTunes' Genius application tracks my behavior and makes remarkably personal recommendations for new music I might enjoy. For me, $.99 per song seems like a great value when I consider all the services I receive. *See generally* iTunes, http://www.apple.com/itunes (last visited May 20, 2010).

[327] Symposium, *The Intellectual Property Renaissance in Cyberspace: Why Copyright Law Could Be Unimportant on the Internet*, 12 BERKELEY TECH. L.J. 15, 33 (1997).

[328] *See* Anderson, *supra* note 325 (stating that cross subsidization is the method of supporting the sale of one product with the profits from another). Similarly, in loss leading one product is given away with the sale of another good. *Id.* The classic example is the Gillette razor and blades model, whereby a razor is given away to stimulate sale of blades. *Id.*

[329] *See* Symposium, *supra* note 327, at 23-30.

[330] *See id.*

[331] *See* Matthew C. Mousley, *Note, Peer-to-Peer Combat: The Entertainment Industry's Arsenal in Its War on Digital Piracy*, 48 VILL. L. REV. 667, 692 (2003).

available for free on the Internet.[332] Paid services often give consumers benefits over their free counterparts, including the option to forgo advertising.[333] For instance, United Online's paid Internet access is advertising-free and successfully competes with its own advertising-supported free service.[334] Auxiliary services can include updates of informational works, maintenance services, or help lines.[335] Content can be bundled with physical merchandise, such as autographed memorabilia, or services, such as hard copies of data, concerts, or live performances.[336]

[89] For example, U2's latest album, *No Line on the Horizon*, sold online in MP3 format for $3.99.[337] It was also released in five physical formats, including a

---

[332] *See* iTunes Store Tops Over Five Billion Songs Sold, http://www.apple.com/pr/library/2008/06/19itunes.html (last visited May 20, 2010). iTunes initially used a TPM called FairPlay, but it provided weak protection (ineffective in preventing piracy). Steve Jobs, Thoughts on Music, Feb. 6, 2007, http://www.apple.com/hotnews/thoughtsonmusic; *See* Nicola F. Sharpe & Olufunmilayo B. Arewa, *Is Apple Playing Fair? Navigating the iPod FairPlay DRM Controversy*, 5 NW. J. TECH. & INTELL. PROP. 332, 333-34 (2007). This was likely purposefully designed that way since iTunes software enabled consumers to burn songs onto CDs rendering then unencrypted, unprotected and beyond the control of FairPlay. JIM FLYNN, HOW TO COMPETE WITH FREE: DEBUNKING THE DIGITAL RIGHTS MANAGEMENT MYTH 1 (2005), http://images.eztakes.com/laf/store/docs/How-to-Compete-with-Free.pdf. FairPlay, however, was instrumental in Apple's success because Apple's iPod was designed to be interoperable with FairPlay encoded files so FairPlay prevented competition. *Id.*

[333] *See, e.g.*, Juno, http://www.juno.com (last visited May 20, 2010) (advertising that Juno, United Online's Internet service provider affiliate, offers limited, free, ad-supported Internet service and paid Internet service without advertisements).

[334] *Id.*

[335] Jane C. Ginsburg, *Copyright and Control Over New Technologies of Dissemination*, 101 COLUM. L. REV. 1613, 1644 (2001); *see also* RedHat, http://www.redhat.com/about/whysubscriptions (last visited May 20, 2010) (showing that Red Hat offers two versions of its software—a paid-for supported version and a freely downloadable version). Red Hat became a leading Linux vendor by distributing a free version of its software and charging customers for support services. *See generally* RedHat Global Support Services, https://www redhat.com/apps/support (last visited May 20, 2010). Although versions of Red Hat Linux are available for free, Red Hat continues to receive the majority of its revenues from support subscribers. *See generally* Matt Asay, *Red Hat's Q3 Earnings Defy Gravity*, CNET NEWS, Dec. 22, 2009, http://news.cnet.com/8301-13505_3-10420488-16.html (last visited May 20, 2010).

[336] Ginsburg, *supra* note 335, at 1644.

[337] *See, e.g.*, No Line On the Horizon: MP3 Downloads: U2, http://dealspl.us/no_line_on_the_horizon_mp3_downloads_u2_133839 (last visited May 20, 2010).

standard CD, a vinyl LP, two limited-edition CDs (with a booklet and a poster or a sixty page magazine), and a box format featuring a DVD and hardback book, priced up to $64.99.[338] Perhaps most interestingly, before users could purchase the album, they could stream it for free on MySpace.[339] The album debuted at number one, selling 484,000 copies in its first week.[340] Since copyrights for physical goods remain intact, tiered marketing strategies can be profitable.[341] Additionally, creators can capitalize on their right to first publication by timing releases appropriately and charging more for the initial distribution.[342]

D. Advertising Will Compensate Intermediaries

1. The Value of Advertising

[90] Advertising is one of the highest-profile and most profitable business models on the Internet.[343] Under the advertising model, intermediaries give away intellectual property to attract visitors to websites.[344] They then sell advertising space on those sites to others.[345] Advertising revenue comes from banners, paid inclusion in search results, paid listing in information services, and lead generation.[346] "[T]he multi-billion dollar broadcast TV industry effectively gives away its intellectual property to viewers, supporting itself almost exclusively on

---

[338] Leah Greenblatt, *U2 and the $3.99 Album: Great Marketing or Financial Folly?*, ENT. WKLY., Mar. 5, 2009, http://popwatch.ew.com/popwatch/2009/03/u2-and-the-399.html; U2.com Shop, https://u2.store2.livenation.com/cgi-bin/WebObjects/Store.woa/wa/artist?artistName=U2com&sourceCode=U2CWEB (last visited May 20, 2010).

[339] *MySpace Music Exclusively Premieres U2`s New Album No Line On The Horizon*, BUS. WIRE, http://www.reuters.com/article/pressRelease/idUS159008+20-Feb-2009+BW20090220 (last visited May 20, 2010).

[340] Jeremy Medina, *U2's 'No Line On the Horizon' Bests Taylor Swift on Album Chart*, ENT. WKLY., Mar. 11, 2009, http://news-briefs.ew.com/2009/03/u2s-no-line-on html.

[341] *See id.*

[342] *See id.*

[343] Symposium, *supra* note 327, at 24.

[344] *Id.*

[345] *Id.*

[346] *See id.* at 25.

advertising."[347] In the digital realm, companies offer quality content or free products and services to encourage consumers to visit websites and to build audiences that advertisers will pay to reach. For example, advertising supports virtually everything Google offers to consumers (including Gmail, Picasa, and GOOG-411).[348] Website traffic is critical in realizing advertising revenue since advertising revenue increases with traffic volume and the amount of time consumers spend using online services. Therefore, it is in the best interest of intermediaries to keep consumers off the Darknet, where they cannot receive advertising.

2. The Value of Data Mining and Business Intelligence

[91] Website traffic gives service providers another valuable resource: the ability to collect data from its visitors regarding their activity and preferences.[349] When consumers download songs, review products, vote in surveys, search for products, and enter personal information into a social networking profile page, they leave behind data regarding their preferences and behaviors.[350] Data mining, the practice of collecting and analyzing digital consumer behavior data, is part of a larger category of business intelligence tools that help companies maximize profits.[351] Data mining allows service providers to sift through an enormous amount of consumer information to find precious business intelligence by uncovering hidden patterns.[352]

[92] Service providers cannot track and log user activity on darknets.[353] Granting consumers free access to content has become a means of drawing consumers to websites for purposes of gathering useful data about their identities

[347] *Id.*

[348] Anderson, *supra* note 325.

[349] *See* Symposium, *supra* note 327, at 28.

[350] *See id.*

[351] *See generally* Jagadish Chaterjee, Using Data Mining for Business Intelligence, Jan. 24, 2005, http://www.aspfree.com/c/a/MS-SQL-Server/Using-Data-Mining-for-Business-Intelligence

[352] *Id.*

[353] *See generally* BIDDLE ET AL., *supra* note 26.

and preferences.[354] This information is extremely valuable to data miners, who use it to discover inherent trends and tendencies in historical information.[355] They use these discoveries to make statistical predictions and better business decisions.[356] Service providers also benefit from data mining by providing consumers with more specialized experiences according to their preferences.[357] Targeted advertising and specialized experiences sell at premium prices.[358]

[93] Business intelligence is growing in popularity, and social networking sites have recently announced plans to mine data collected from their users' activities.[359] For instance, Facebook, a social networking site, offers advertisers a *Facebook Insights* statistics package that provides valuable data metrics including user activity, fan demographics, ad performance, and trends.[360] Some content providers mine and analyze their own data, while others enlist third-party services, such as the SAS Institute.[361]

[94] Data mining is beneficial to consumers as well.[362] Users benefit from receiving relevant information, products, and services that effectively address their individual needs.[363] Data aggregation services can monitor a user's activities

---

[354] LESSIG, *supra* note 8, at 48.

[355] Chaterjee, *supra* note 351.

[356] *Id.*

[357] *See generally* Kurt Thearling, *Data Mining and Customer Relationships*, http://www.thearling.com/text/whexcerpt/whexcerpt htm (last visited May 20, 2010).

[358] *See generally id.*

[359] Giselle Abramovich, *MySpace Has Data-Mining Plans*, DMNEWS, Sept. 24, 2007, http://www.dmnews.com/MySpace-has-data-mining-plans/article/98564 (including an estimation of the potential value of data mining by Perry Solomon, vice president of business development and general manager of Media Solutions, a data mining services provider).

[360] Facebook Help Center, http://www.facebook.com/help/?search=insights#/help/?page=914 (last visited May 20, 2010).

[361] *See* About SAS, http://www.sas.com/corporate/overview/index html (last visited May 20, 2010).

[362] *See, e.g.*, Rachel Konrad, *Will Data Mining Revolutionize E-Commerce?*, CNET NEWS, Feb. 8, 2001, http://news.cnet.com/2009-1017-252162 html.

[363] *See generally id.*

and make recommendations based on that user's perceived preferences and the behaviors of other similar users.[364] One data mining service believes the social networking website MySpace might be able to almost double its revenue, from forty million dollars a month to seventy million dollars a month, with data mining.[365] Of course, service providers can only collect information if they can monitor user behavior. Therefore, they have a vested interest in quashing the Darknet and permitting visitors to consume creative works where their behavior can be monitored.

3. Intermediaries Will Compensate Creators

[95] Admittedly, alternative business models that provide opportunities for service providers to profit do not completely replace the function of a copyright monopoly since they do not necessarily compensate content creators. However, just as consumers and advertisers will pay for the goods and services they want, intermediaries will pay creators for the content they value.

[96] Service providers require an influx of traffic to their sites in order to realize profits under any business model. Content is the dangling carrot that entices consumers to visit particular websites. Without content, services providers cannot offer convenience, bundling, or advertising. Since service providers value quality content that attracts consumers to their sites, they will be motivated to commission its production. Under a digital use exception copyright regime, intermediaries become free from infringement liability and armed with the ability to collect user data. Thus, these service providers will possess the motivation and necessary resources to fund the production of content that requires significant capital investment (full-length motion pictures, television shows, and popular music).[366] Further, in a competitive market, distributed networking would ensure

[364] *Id.*

[365] Abramovich, *supra* note 359.

[366] Netanel, *supra* note 240, at 76 (noting that some opponents of advertising-supported content claim that it might lead to undesirable, advertiser-driven distortions of creative expression). Such opponents might be correct to a limited extent; however, advertising-supported content is unlikely to pose a threat to free speech or free expression since content must appeal to consumer preferences in order to return a profit, and distributed networking protects the interests of marginal groups.

access to content, and intermediaries would compete to create more valuable and better quality services.[367]

E. Hope For the Future: A Netflix Case Study

[97] In late 2006, Netflix presented evidence that service providers are willing to commission content when it announced its Red Envelope Entertainment division would fund and produce independent shows and feature films.[368]

[98] In 1984, the United States Supreme Court created a copyright shelter that sparked a chain reaction of innovation that is directly responsible for creating virtually every means of digital media technology in existence today.[369] In *Sony Corp. v. Universal Studios*, better known as the "*Betamax Case*,"[370] the Court found that copying a television show on a home recording device for purposes of time shifting did not constitute copyright infringement.[371] The Court also held that the manufacturers of home video recording devices could not be liable for infringement.[372] The *Betamax* decision created new opportunities for business, including a booming home video rental market.

[99] Since 1997, Netflix has been a pioneer of Internet DVD distribution.[373] The innovative company embraced the low-cost advantages of digital reproduction and distribution.[374] Rather than spending money on packaging, Netflix cheaply reproduces DVDs, ships films in thin envelopes, and permits

[367] *See* LESSIG, *supra* note 8, at 49.

[368] *See* Rachel Dornhelm, *Netflix Expands Indie Film Biz*, AM. PUB. MEDIA, Dec. 8, 2006, http://marketplace.publicradio.org/display/web/2006/12/08/netflix_expands_indie_film_biz.

[369] *See* Press Release, Consumer Federation of America, Role of Peer-To-Peer in Technological Innovation, Mar. 22, 2005, http://www hearusnow.org/homepage/00/general/5.

[370] Betamax Case, Museum of Broad. Commc'ns, http://www.museum.tv/eotvsection.php?entrycode=betamaxcase (last visited May 20, 2010).

[371] Sony Corp. of Am. V. Universal City Studios, Inc., 464 U.S. 417, 429 (1984).

[372] *Id.* at 439.

[373] Press Release, netflix, Inc., First Online DVD Rental Store Opens, Apr. 14, 1998, http://netflix.mediaroom.com/index.php?s=43&item=23.

[374] *Id.*

users to stream content online.[375] Instead of costly advertising, Netflix uses data mining technology to generate buzz with personalized viewing suggestions for subscribers.[376] As its technology gives Netflix a detailed understanding of its customer base, it can utilize the large-scale advantages of a global marketplace to invest in media targeting marginal groups.[377] Additionally, as Netflix has low overhead, the company can invest in content that might sell fewer units than a conventional distributor could afford.[378]

[100] Unfortunately, Netflix closed Red Envelope Entertainment in 2008, citing competition with its Hollywood counterparts as the reason for its demise.[379] More precisely, the Hollywood competitors, upon whom Netflix depends for licensing content, felt threatened by Netflix's success.[380] Whatever its reason for closing, Netflix's example indicates that the market will find a way to fund production if content can generate a profit. We must now speculate whether, if Netflix were free to distribute content without pressure from its licensing partners, Red Envelope Entertainment would have produced the next *Avatar*, or at least the next *Slumdog Millionaire*.

---

[375] *See* Netflix Media Center, http://www netflix.com/mediacenter?lnkce=ftrln&trkid=921401 (last visited May 20, 2010).

[376] Dornhelm, *supra* note 368.

[377] *See* Erin Biba, *Netflix Presents*, WIRED, Sept. 2006, available at http://www.wired.com/wired/archive/14.09/netflix html?pg=2&topic=netflix&topic_set (including an explanation by Netflix's chief content officer, Ted Sarandos, that data mining technology makes Netflix profitable and Red Envelope viable due to the large number of transactions users complete with the Netflix service). With rich data, the company can develop sophisticated profiles to anticipate preferences and tastes. *Id.*

[378] *See generally* Dornhelm, *supra* note 368 (regarding how Netflix sought to capitalize on inexpensive reproduction technology and the large scale of the Internet to profit from marginal works).

[379] Mark Hefflinger, *Netflix to Shutter Film Financing Unit Red Envelope*, DIGITAL MEDIA WIRE, July 28, 2008, http://www.dmwmedia.com/news/2008/07/22/netflix-shutter-film-financing-unit-red-envelope.

[380] *See* Chris Matyszczyk, *Did Netflix Really Have to Kill Off Red Envelope?*, CNET NEWS, July 26, 2008, http://news.cnet.com/8301-17852_3-10000311-71.html.

CONCLUSION

[101] Copyright was born in the fallout of a political revolution, when the drafters of the Constitution created it to safeguard democracy and defend future generations against the tyranny of monarchy. On the verge of the industrial revolution, the drafters could foresee that mass production of printed works was likely to flourish. At the time, a limited monopoly protected innovative printing technology and the expression contained on the pages that passed through the presses. Copyright's monopoly served its purpose for nearly two hundred years by allowing authors and publishers to recoup the real costs associated with creating and disseminating new expressive works.

[102] Essentially, the Internet is an enormous distributed network. Its precursor, ARPAnet, was created in 1969, when two computers were networked and a message was communicated directly between them.[381] This connection sparked a digital revolution, changing the way the world shares ideas and shifting control into the hands of ordinary consumers. Building on the distributed network concept, eighteen-year-old Shawn Fanning released Napster in 1999, spawning a decade of controversy surrounding unauthorized digital copying.[382] In this highly publicized copyright war,[383] sparring factions debated whether the law should grant creators and publishers more control or allow consumers more access to creative works. The point, however, is moot. The Darknet has eliminated the choice.

[103] Just as traditional copyrights were created to defend against tyranny, digital copyrights must now be abolished in the digital realm for the same reason.

---

[381] *See* Chris Sutton, *Internet Began 35 Years Ago at UCLA; Forum to Mark Anniversary Oct. 29*, Sept. 14, 2004, http://newsroom.ucla.edu/portal/ucla/Internet-Began-35-Years-Ago-at-5464.aspx?RelNum=5464.

[382] *See generally* Jennifer Askanazi et al., *The Fate of Napster: Digital Downloading Faces An Uphill Battle*, 2001 DUKE L. & TECH. REV. 13, ¶ 4 (2001); Napster: Then and Now, http://iml.jou.ufl.edu/projects/Spring01/Burkhalter/Napster%20history.html (last visited May 20, 2010).

[383] *See* LESSIG, *supra* note 8, at xv-xvi. Lessig notes that in response to legislation that blocked access to works and aggressive litigation, consumers claimed that overprotection of ideas stifles creation and demanded access to digital works. *See id.* The resulting rift between the two sides has been dubbed the "copyright wars." *Id.* The term refers both to the "war" on copyright "waged" by "pirates" and the "war" on "piracy" which "threatens" the "survival" of certain important American industries. *Id.*

Liability rules have chipped away at the distributed network infrastructure that promotes free and efficient distribution of expression. Even worse, media consolidation is placing power and money in the hands of a privileged few who work diligently to preserve the status quo. Six companies currently own ninety percent of the media holdings in the United States: Viacom, Disney, Time Warner, General Electric, Bertelsmann, and News Corporation.[384] In terms of Internet access, five ISPs (each owned by one of the six major media conglomerates) share almost fifty percent of the market.[385] In 2008 alone, this media oligopoly earned over $300 billion in revenue,[386] and it wields considerable political power. In the shadow of this oppressive hand, the Darknet provides consumers a refuge where they can make unauthorized copies, share ideas, and speak freely, without the fear of being caught.

[104] Ad-hoc legislation is no longer sufficient to repair the decades-long damage of traditional copyright's functioning in the digital realm. Rescuing democracy requires a reconstructive overhaul of digital copyright law. Fear that creative works will no longer be created absent a monopoly-like incentive is unfounded. Uncertainty about the future is no excuse for sanctioning legal standards that force inferior technology and protect archaic power structures. Empirical evidence demonstrates the social and economic benefits of publicly distributed networks, and the law should be overhauled to encourage further technological innovation. The ease with which information goods can be replicated is inversely proportional to the cost of creating and distributing creative works. Digital technology empowers market forces to pay for any real expenses required for the creation of new works. One scholar keenly noted that it is better to err on the side of public access and correct incentive problems later (if they

[384] *See* Lauren Horwitch, *Media Consolidation: Hollywood Versus the Big Six*, BACK STAGE, Oct. 19, 2006, http://www.backstage.com/bso/news_reviews/multimedia/article_display.jsp?vnu_content_id=1003285440 (listing the Big Six as Viacom, Disney, Time Warner, General Electric, Bertelsmann and News Corporation, and their respective heads as Sumner Redstone, Robert Iger, Richard Parsons, Jeffrey R. Immelt, Carl Bertelsmann, and Rupert Murdoch). *See generally* Mark Crispin Miller, *What's Wrong With This Picture?*, THE NATION, Jan. 7, 2002, available at http://www.thenation.com/doc/20020107/miller.

[385] Alex Goldman, *Top 23 U.S. ISPs by Subscriber: Q3 2008*, Dec. 2, 2008, ISP-PLANET, http://www.isp-planet.com/research/rankings/usa html (noting the top five ISPs have a combined market share of 48.2%).

[386] *See* FreePress, Ownership Chart: The Big Six, http://www freepress.net/ownership/chart/main (last visited May 20, 2010).

appear).[387] Once granted, it is harder to take a concession away from an industry than it is to add a burden to users.[388]

[105] In economic theory, waste represents a cost to society incurred when supply does not correlate to consumer demand. Publicly distributed networks eliminate waste associated with the distribution of information goods. Networks like the aptly named WASTE, a parasitic darknet capable of secretly piggybacking on university or corporate networks[389] and leeching their resources, must also be eradicated. To do so, society must throw away the detritus of a failing digital copyright regime and build a refurbished sanctuary for digital democracy in its place.

[387] Michael J. Meurer, *Price Discrimination, Personal Use and Piracy: Copyright Protection of Digital Works*, 45 BUFF. L. REV. 845, 895 (1997).

[388] *Id.*

[389] *See* Robert Capps, *The Invisible Inner Circle*, WIRED, Apr. 2004, *available at* http://www.wired.com/wired/archive/12.04/start.html?pg=9.